

506-6.

JUL 1 - 1916

CROUSE-HINDS INCANDESCENT HEADLIGHTS



CROUSE-HINDS COMPANY

Syracuse, N. Y., U. S. A.

New York

Boston

Cincinnati

Chicago

CROUSE HANDS

INCANDESCENT

THE ADLIGITS



506-6.

CROUSE-HINDS
INCANDESCENT
HEADLIGHTS

TYPES

“W,” “Z,” “ZB,” “I”

AND

“SYRACUSE CHANGEABLE”

ALSO

THE MULTIPLE BREAK
HEADLIGHT SWITCH

BULLETIN No. 56
ISSUED OCT. 1, 1911



CROUSE-HINDS COMPANY

SYRACUSE, N. Y., U. S. A.

NEW YORK
30 CHURCH STREET

BOSTON
201 DEVONSHIRE STREET

CHICAGO
417 S. DEARBORN STREET

CINCINNATI
18 EAST FOURTH AVENUE

TORONTO
STAFFORD AND DEFOE STREETS



Type "W" Headlight

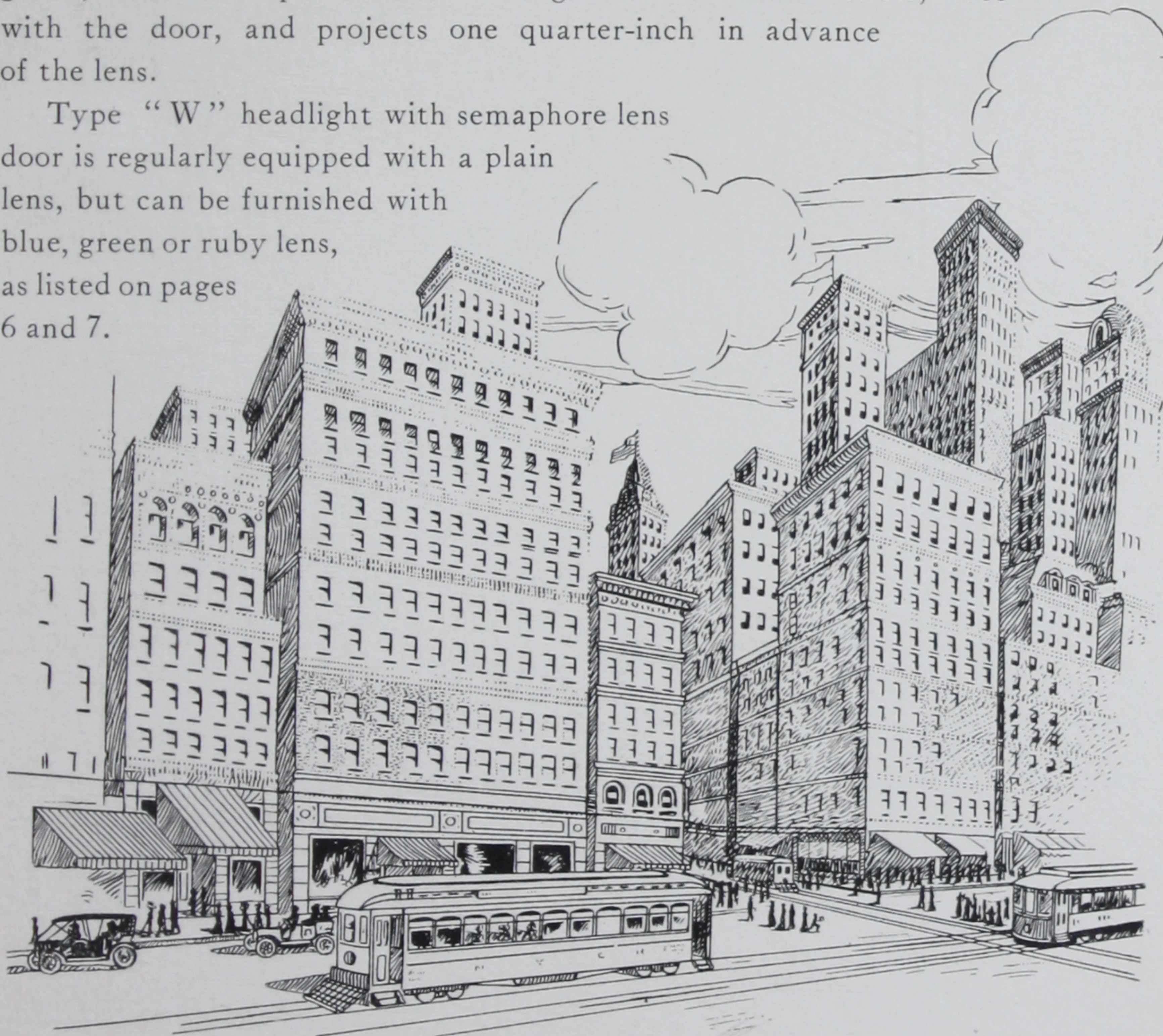
TYPE "W" headlight is for mounting on the front of dash and is secured in position by six bolts.

Both case and door are cast iron finished in weatherproof black enamel. The lower portion of the case is arranged as a guard which prevents the trolley rope from catching on the headlight. The door is hinged at the top so as to close by gravity, and is held shut by a spring catch at the bottom.

The reflector is a true parabola, and is secured to the case by four screws. Either of two styles of reflectors are furnished with the type "W" headlight, namely, one of polished aluminum, the other of formed steel, white enameled. Any 16 or 32 c. p. incandescent lamp can be adjusted to the focal point of the reflector. This is made possible by an adjustable fixture to which the lamp receptacle is secured. Unless otherwise specified, the headlight is shipped with the receptacle adjusted for a 16 c. p. lamp.

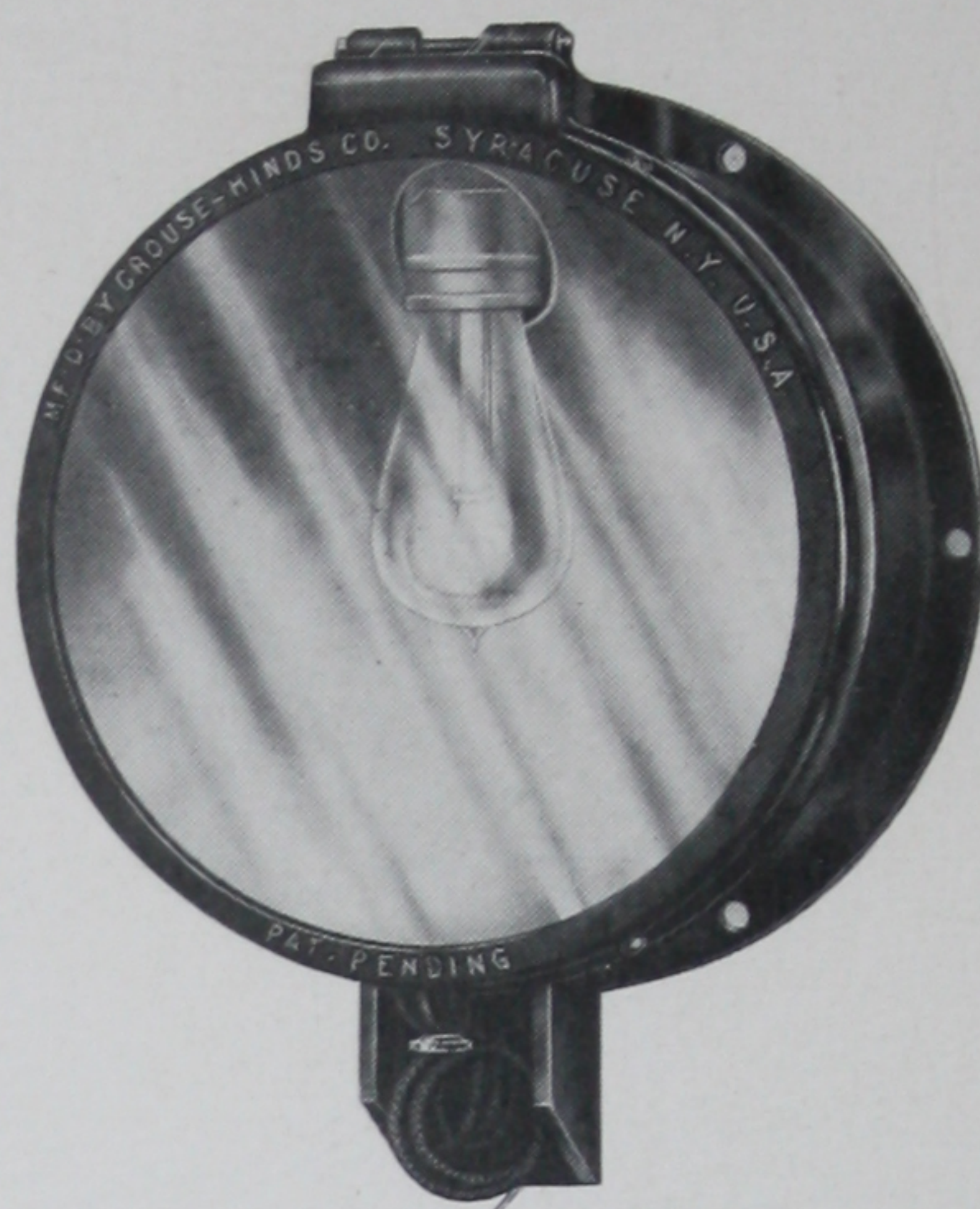
Four styles of doors, all interchangeable, are made for this headlight. They are: a plain door; a grid door, which has four cast ribs in front of the glass; a door with a semaphore lens, and a door with a protecting flange, or guard, and a semaphore lens. This guard is a circular collar, cast with the door, and projects one quarter-inch in advance of the lens.

Type "W" headlight with semaphore lens door is regularly equipped with a plain lens, but can be furnished with blue, green or ruby lens, as listed on pages 6 and 7.



Type "W" Headlight

With Plain Glass



Front View



Side View

Specifications

Total Depth	Total Height	Total Width	Diameter Reflector
4 $\frac{5}{16}$ in.	14 $\frac{1}{4}$ in.	11 $\frac{1}{4}$ in.	8 $\frac{3}{4}$ in.

Listings of Type "W" Headlight, with Plain Glass

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass	24093	Edilita	\$5.20
With Plate Glass	24094	Edilitaire	5.55
White Enameled Steel Reflector			
With Double Thick Glass	24901	Egravoir	\$5.20
With Plate Glass	24902	Egregiat	5.55

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$1.90 in the list price, if specifically ordered.

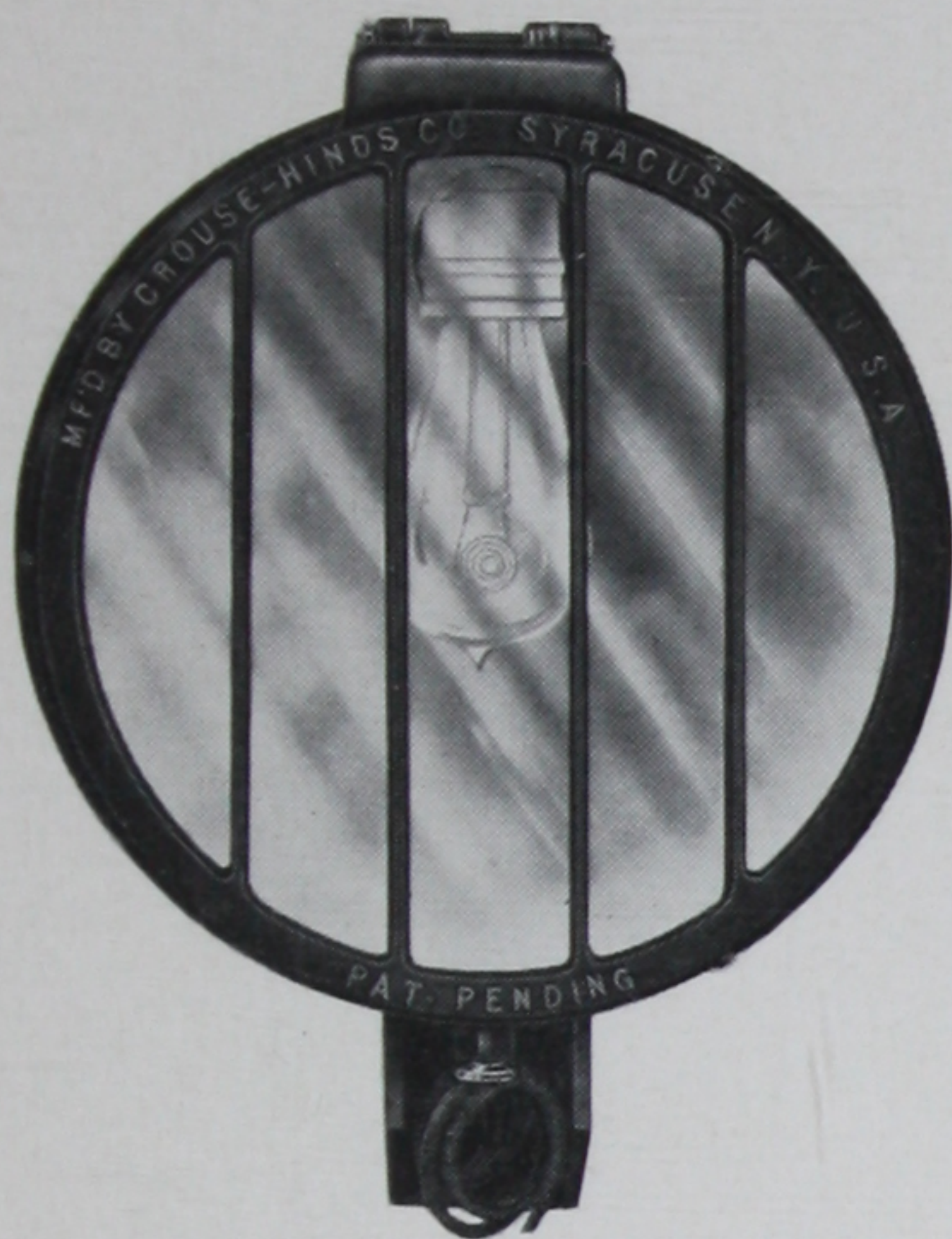
Shipping weight, gross, 30 pounds; net, 20 pounds.

Shipping dimensions, 19x14x10 inches.

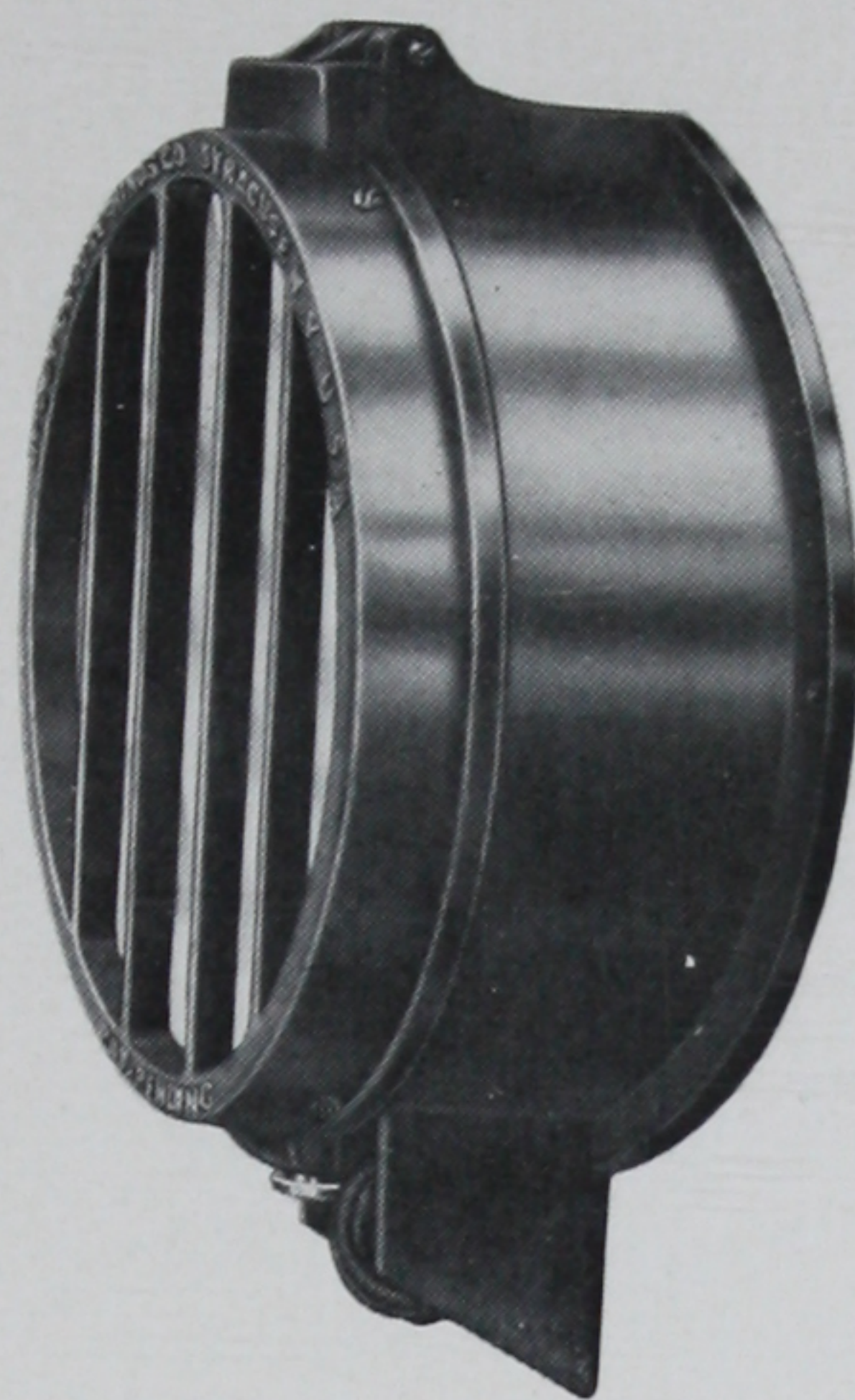
Assembled and Detailed Parts listed on pages 27, 29 and 30.

Type "W" Headlight

With Plain Glass and Grid



Front View



Side View

Specifications

Total Depth	Total Height	Total Width	Diameter Reflector
4 $\frac{11}{16}$ in.	14 $\frac{1}{4}$ in.	11 $\frac{1}{4}$ in.	8 $\frac{3}{4}$ in.

Listings of Type "W" Headlight, with Plain Glass and Grid

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass and Grid	24095	Ediografia	\$5.55
With Plate Glass and Grid	24096	Ediologia	5.90
White Enameled Steel Reflector			
With Double Thick Glass and Grid	24903	Egregious	\$5.55
With Plate Glass and Grid	24904	Egregores	5.90

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$2.70 in the list price, if specifically ordered.

Shipping weight, gross, 32 pounds; net, 22 pounds.

Shipping dimensions, 19x14x10 inches.

Assembled and Detailed Parts listed on pages 27, 29 and 30.

Type "W" Headlight

With Semaphore Lens



Front View



Side View

Specifications

Total Depth	Total Height	Total Width	Diameter Lens
5 ¹⁵ / ₁₆ in.	14 ¹ / ₄ in.	11 ¹ / ₄ in.	8 ³ / ₈ in.

Listings of Type "W" Headlight, with Semaphore Lens

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Plain Semaphore Lens	24097	Ediosmo	\$6.90
With Blue Semaphore Lens	24098	Ediotide	7.30
With Green Semaphore Lens	24099	Ediotomia	7.30
With Ruby Semaphore Lens	24100	Edisaro	8.50
White Enameled Steel Reflector			
With Plain Semaphore Lens	24905	Egressing	\$6.90
With Blue Semaphore Lens	24906	Egribos	7.30
With Green Semaphore Lens	24907	Egrillard	7.30
With Ruby Semaphore Lens	24908	Egriot	8.50

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$3.40 in the list price, if specifically ordered.

Shipping weight, gross, 33 pounds; net, 23 pounds.

Shipping dimensions, 19x14x10 inches.

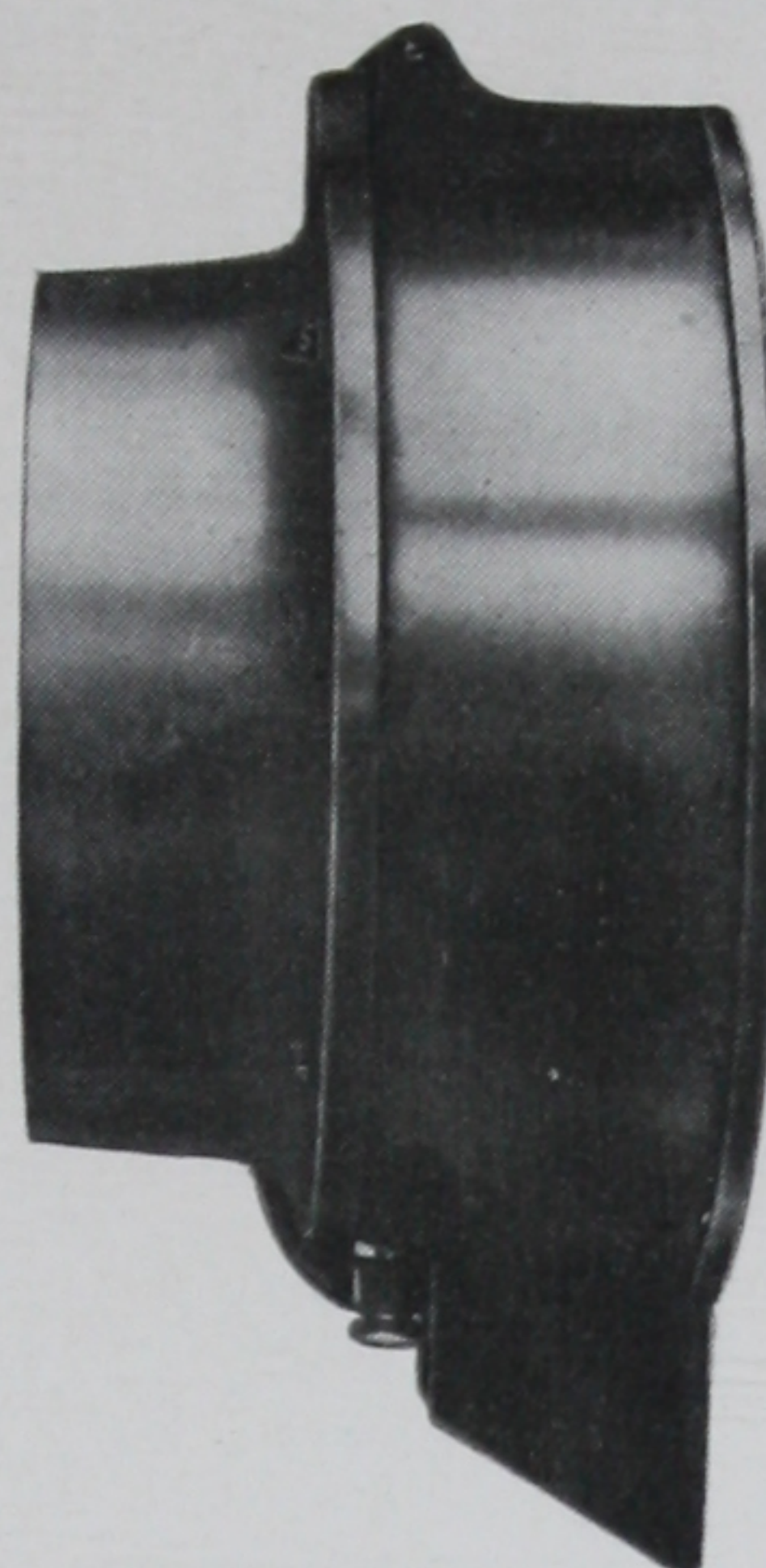
Assembled and Detailed Parts listed on pages 27, 29 and 30.

Type "W" Headlight

With Semaphore Lens and Guard



Front View



Side View

Specifications

Total Depth	Total Height	Total Width	Diameter Lens
6¼ in.	14¼ in.	11¼ in.	8⅜ in.

Listings of Type "W" Headlight, with Semaphore Lens and Guard

Polished Aluminum Reflector

Style of Headlight	Cat. No.	Code Word	List Price
With Plain Semaphore Lens and Guard	24909	Egrainage	\$7.30
With Blue Semaphore Lens and Guard	24910	Egraminer	7.70
With Green Semaphore Lens and Guard	24911	Egrappage	7.70
With Ruby Semaphore Lens and Guard	24912	Egrapper	8.90

White Enameled Steel Reflector

With Plain Semaphore Lens and Guard	24913	Egrisage	\$7.30
With Blue Semaphore Lens and Guard	24914	Egritude	7.70
With Green Semaphore Lens and Guard	24915	Egrotant	7.70
With Ruby Semaphore Lens and Guard	24916	Egsmeden	8.90

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Shipping weight, gross, 35 pounds; net, 25 pounds.

Shipping dimensions, 19x14x10 inches.

Assembled and Detailed Parts listed on pages 27, 29 and 30.

Type "Z" Headlight

TYPE "Z" headlight is for mounting flush with the dash. This arrangement minimizes the danger of breakage as a result of collisions. The headlight is compact and neat in design. Both case and door frame are of cast iron, finished in weatherproof black enamel. The door is hinged at the top so as to close by gravity, and is held shut by a spring catch at the bottom.

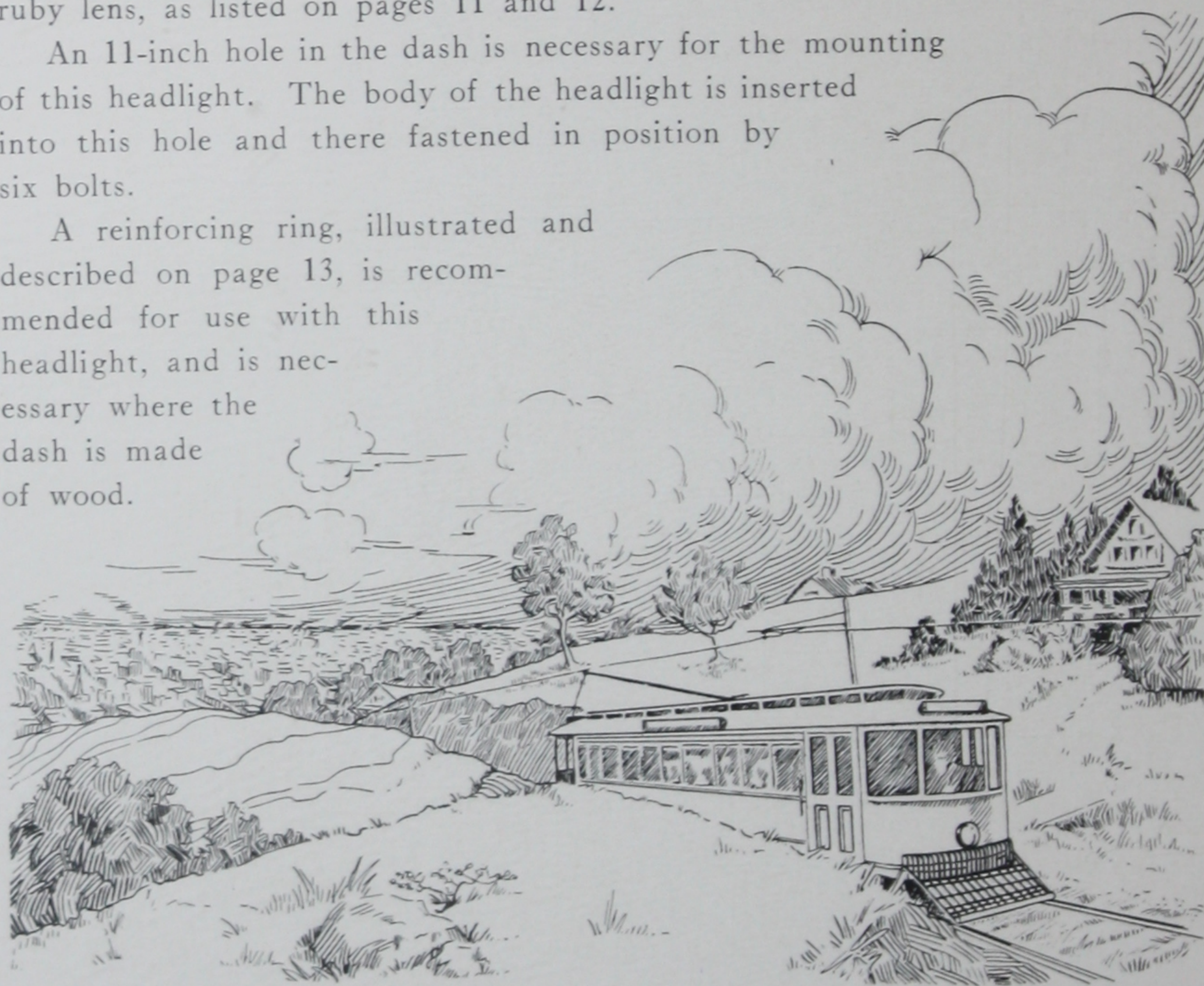
The reflector is a true parabola and is secured to the case by four screws. Either of two styles of reflectors are furnished with the type "Z" headlight, namely, one of polished aluminum, the other of formed steel, white enameled. Any 16 or 32 c. p. incandescent lamp can be adjusted to the focal point of the reflector. This is made possible by an adjustable fixture to which the lamp receptacle is secured. Unless otherwise ordered, the headlight is shipped with the receptacle adjusted for a 16 c. p. lamp.

Four styles of interchangeable doors are made for this headlight. They are: a plain door; a grid door, which has four cast ribs, cast with door, to protect the glass; a door with a semaphore lens, and a door with a protecting flange, or guard, and a semaphore lens.

This guard is a circular collar, cast with the door, and projects a quarter-inch beyond the lens. Type "Z" headlight with semaphore lens door is regularly equipped with a plain lens, but can be furnished with blue, green, or ruby lens, as listed on pages 11 and 12.

An 11-inch hole in the dash is necessary for the mounting of this headlight. The body of the headlight is inserted into this hole and there fastened in position by six bolts.

A reinforcing ring, illustrated and described on page 13, is recommended for use with this headlight, and is necessary where the dash is made of wood.



Type "Z" Headlight

With Plain Glass



Front View



Side View

Specifications

Total
Depth
4½ in.

Total Height
and Width
12¾ in.

Projection
from Dash
2⅛ in.

Diameter
Reflector
9¾ in.

Listings of Type "Z" Headlight, with Plain Glass

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass	24110	Effodisti	\$5.20
With Plate Glass	24111	Effædis	5.55
White Enameled Steel Reflector			
With Double Thick Glass	24151	Egosiller	\$5.20
With Plate Glass	24152	Egotheism	5.55

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$1.90 in the list price, if specifically ordered.

Shipping weight, gross, 30 pounds; net, 20 pounds.

Shipping dimensions, 17x15x10 inches.

Assembled and Detailed Parts listed on pages 27, 28, 29 and 30.

Type "Z" Headlight

With Plain Glass and Grid



Front View



Side View

Specifications

Total Depth	Total Height and Width	Projection from Dash	Diameter Reflector
4 ⁷ / ₈ in.	12 ³ / ₈ in.	2 ¹ / ₂ in.	9 ³ / ₄ in.

Listings of Type "Z" Headlight, with Plain Glass and Grid

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass and Grid	24112	Effædo	\$5.55
With Plate Glass and Grid	24113	Effondrait	5.90
White Enameled Steel Reflector			
With Double Thick Glass and Grid	24153	Egothele	\$5.55
With Plate Glass and Grid	24154	Egotism	5.90

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$2.70 in the list price, if specifically ordered.

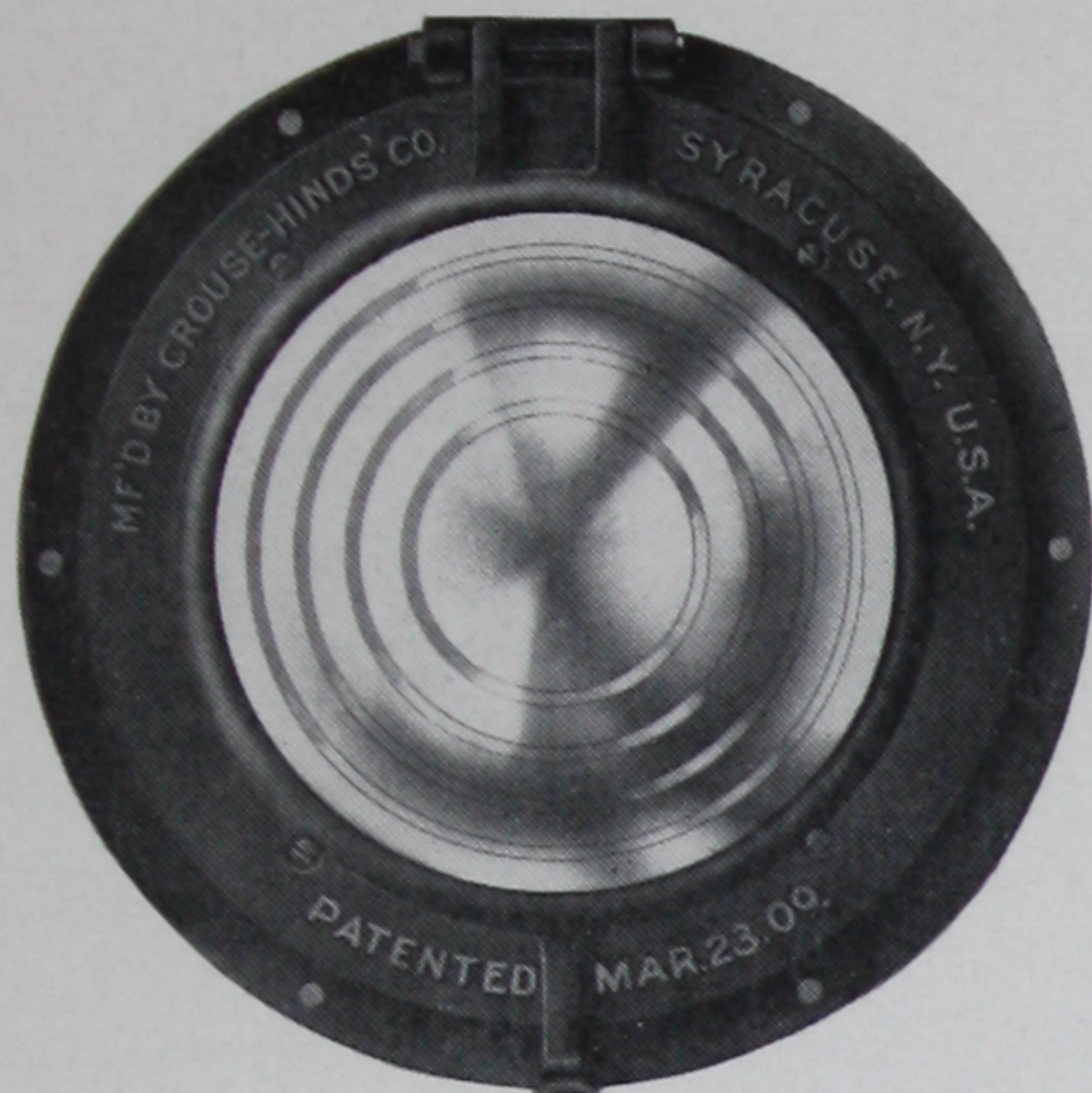
Shipping weight, gross, 32 pounds; net, 22 pounds.

Shipping dimensions, 17x15x10 inches.

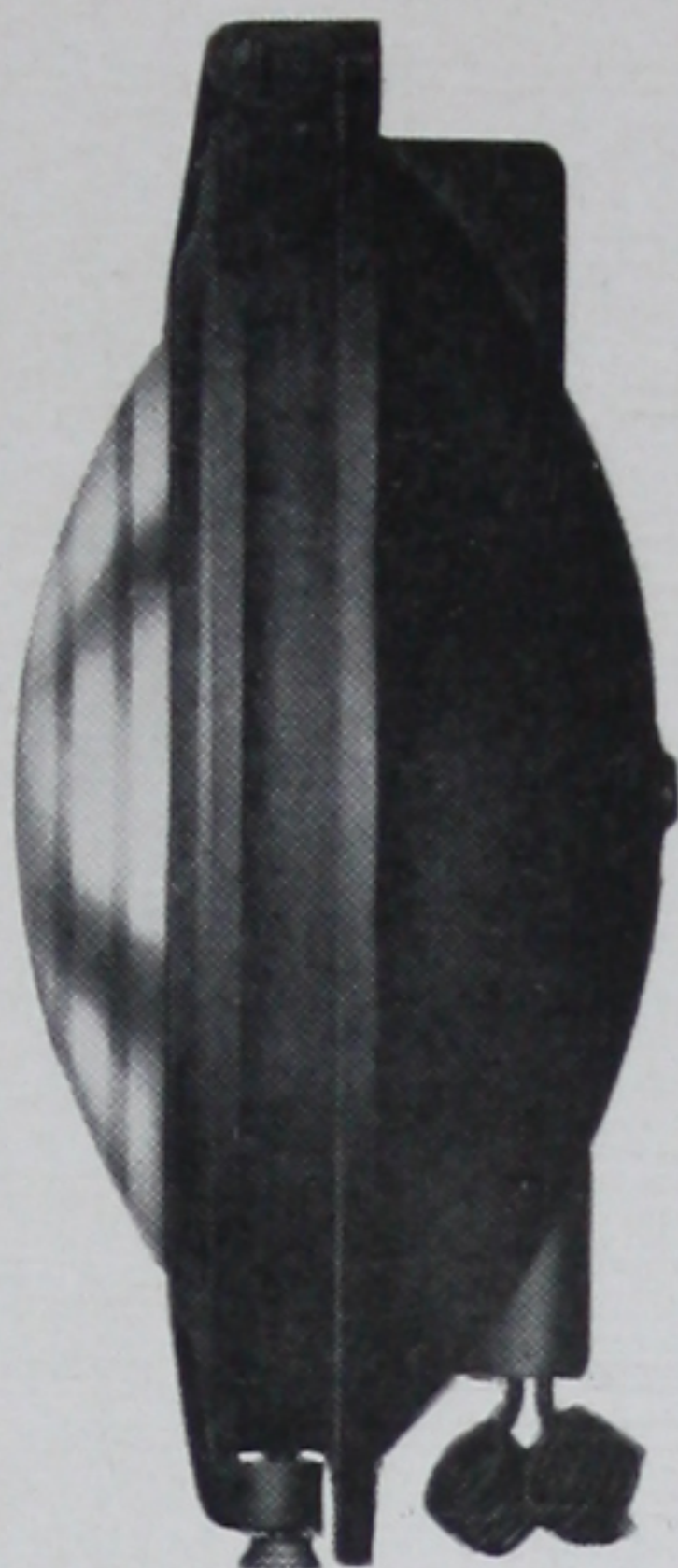
Assembled and Detailed Parts listed on pages 27, 28, 29 and 30.

Type "Z" Headlight

With Semaphore Lens



Front View



Side View

Specifications

Total Depth	Total Height and Width	Projection from Dash	Diameter Lens
5 15/16 in.	12 3/8 in.	3 9/16 in.	8 3/8 in.

Listings of Type "Z" Headlight, with Semaphore Lens

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Plain Semaphore Lens	24114	Effondront	\$6.90
With Blue Semaphore Lens	24115	Egoletro	7.30
With Green Semaphore Lens	24116	Egologie	7.30
With Ruby Semaphore Lens	24117	Egophone	8.50

White Enameled Steel Reflector			
With Plain Semaphore Lens	24155	Egotistic	\$6.90
With Blue Semaphore Lens	24156	Egotize	7.30
With Green Semaphore Lens	24157	Egotizing	7.30
With Ruby Semaphore Lens	24158	Egout	8.50

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$3.40 in the list price, if specifically ordered.

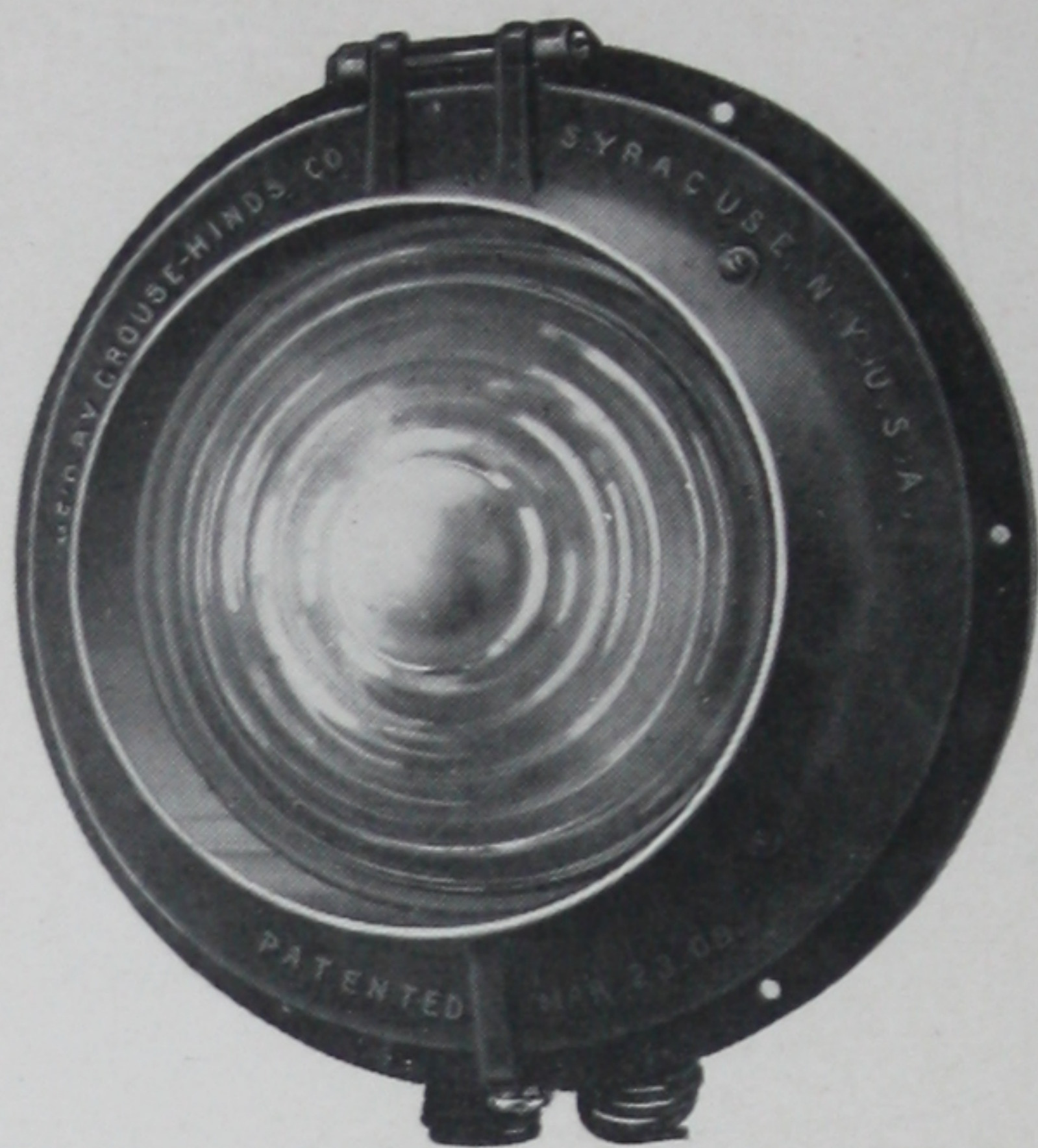
Shipping weight, gross, 33 pounds; net, 23 pounds.

Shipping dimensions, 17x15x10 inches.

Assembled and Detailed Parts listed on pages 27, 28, 29 and 30.

Type "Z" Headlight

With Semaphore Lens and Guard



Front View



Side View

Specifications

Total Depth	Total Height and Width	Projection from Dash	Diameter Lens
6 $\frac{3}{16}$ in.	12 $\frac{3}{8}$ in.	3 $\frac{13}{16}$ in.	8 $\frac{3}{8}$ in.

Listings of Type "Z" Headlight, with Semaphore Lens and Guard

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Plain Semaphore Lens and Guard	24118	Egopodio	\$7.30
With Blue Semaphore Lens and Guard	24119	Egoprigo	7.70
With Green Semaphore Lens and Guard	24121	Egorgoir	7.70
With Ruby Semaphore Lens and Guard	24122	Egorgille	8.90
White Enameled Steel Reflector			
With Plain Semaphore Lens and Guard	24159	Egoutier	\$7.30
With Blue Semaphore Lens and Guard	24160	Egouttage	7.70
With Green Semaphore Lens and Guard	24161	Egraffigne	7.70
With Ruby Semaphore Lens and Guard	24162	Egrageure	8.90

Prices do not include incandescent lamp.

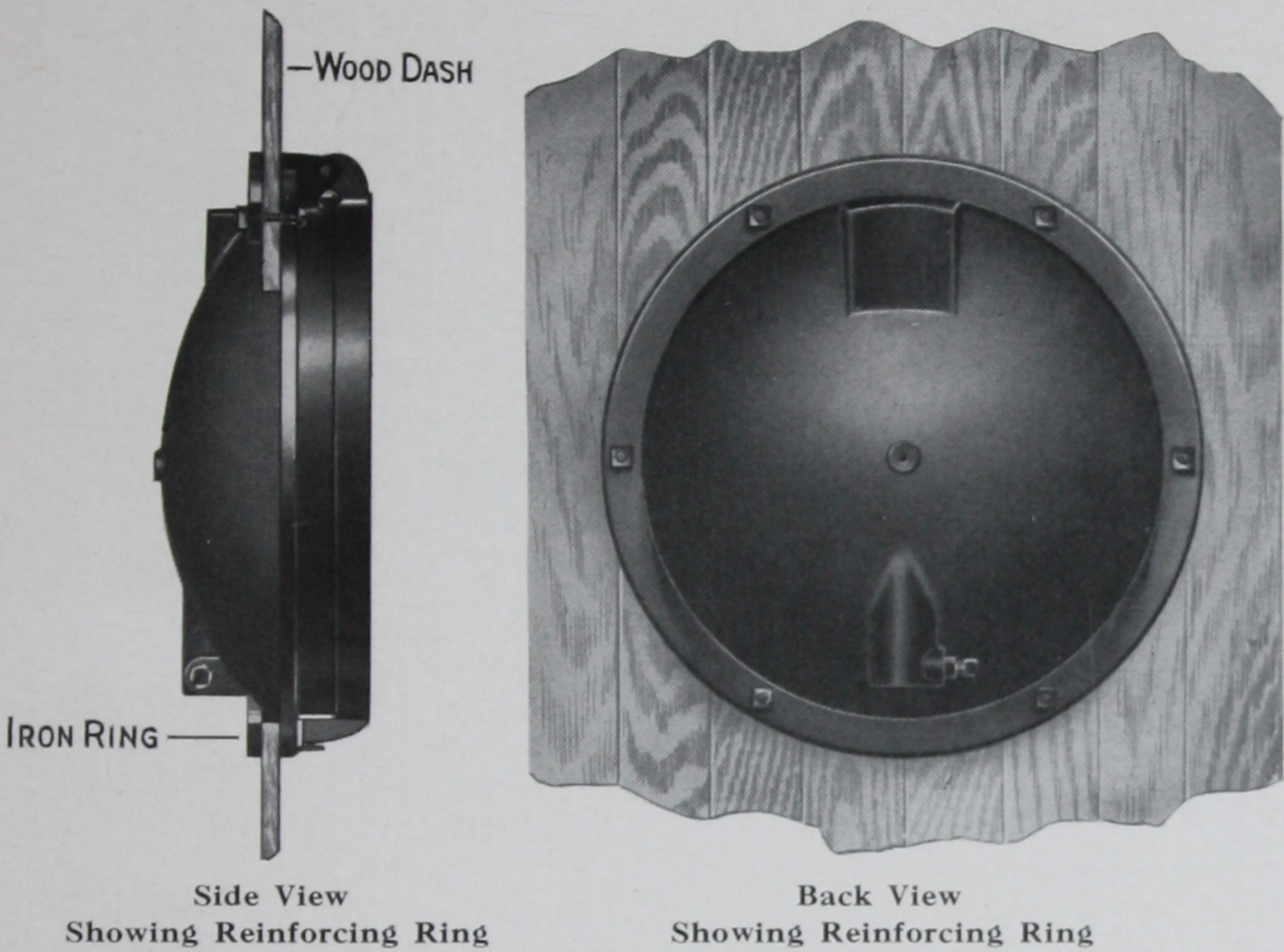
Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Shipping weight, gross, 35 pounds; net, 25 pounds.

Shipping dimensions, 17x15x10 inches.

Assembled and Detailed Parts listed on pages 27, 28, 29 and 30.

Reinforcing Ring For Type "Z" Headlight



The above views show the type "Z" headlight mounted on a wooden dash. In such an installation, a reinforcing ring is necessary to hold in position the ends of boards at opening in dash. By means of the reinforcing ring and bolts, ends of boards are clamped tightly against the flange of case. The reinforcing ring is cast iron, and drilled for fastening bolts.

Listings

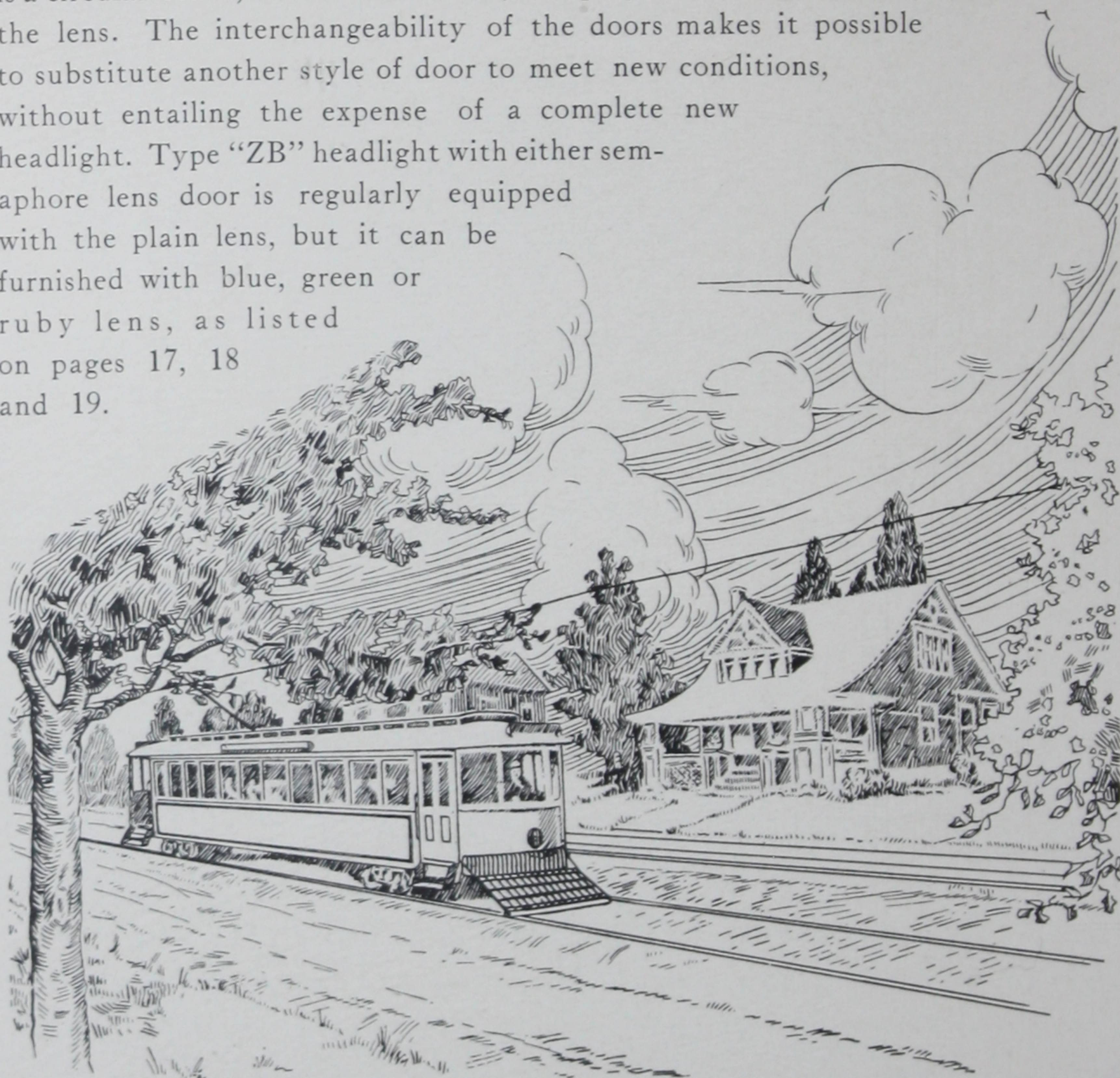
Description	Cat.No.	Code Word	List Price
Reinforcing Ring	24120	Effor	\$.50

Type "ZB" Headlight

TYPE "ZB" headlight is arranged for flush mounting. It is made in three parts—body, clamping ring and door. When mounted, the body of the headlight is placed against the rear of the dash, and the clamping ring and door on the front. The body and clamping ring are fastened in place by eight bolts, which engage an equal number of nuts after passing through ring, dash and flange on headlight body.

This construction meets the demand for a Crouse-Hinds headlight that can be mounted on a dash previously cut for a headlight of another make, where the hole is not more than ten inches in diameter. The arrangement of the type "ZB" headlight also makes a reinforcing ring unnecessary when the headlight is installed on a wooden dash.

Five styles of interchangeable doors are made for this headlight. They are: a plain door; a grid door, which has four ribs, cast with the door, to protect the glass; a door with a semaphore lens; a door with an inverted semaphore lens, and a door with protecting flange, or guard, and a semaphore lens. This guard is a circular collar, cast with the door, and projects one quarter-inch beyond the lens. The interchangeability of the doors makes it possible to substitute another style of door to meet new conditions, without entailing the expense of a complete new headlight. Type "ZB" headlight with either semaphore lens door is regularly equipped with the plain lens, but it can be furnished with blue, green or ruby lens, as listed on pages 17, 18 and 19.

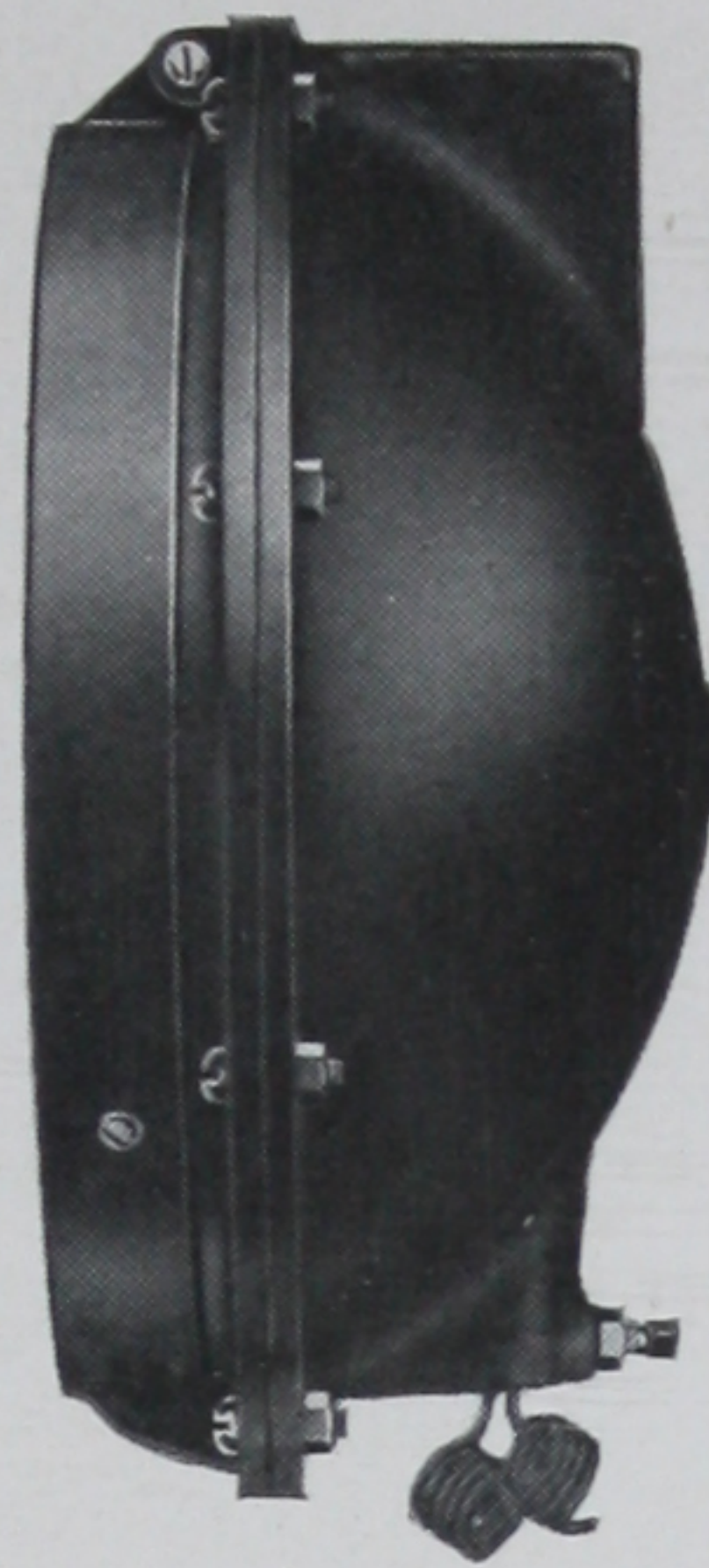


Type "ZB" Headlight

With Plain Glass



Front View



Side View

Specifications

Total
Depth
4 $\frac{7}{8}$ in.

Total Height
and Width
11 $\frac{1}{2}$ in.

Projection
from Dash
1 $\frac{9}{16}$ in.

Diameter
Reflector
8 $\frac{3}{4}$ in.

Listings of Type "ZB" Headlight, with Plain Glass

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass	24801	Egsmid	\$5.50
With Plate Glass	24802	Egualendo	5.85
White Enameled Steel Reflector			
With Double Thick Glass	24851	Eilbote	\$5.50
With Plate Glass	24852	Eilfertig	5.85

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame at an advance of \$1.90 in the list price, if specifically ordered.

Shipping weight, gross, 30 pounds; net, 20 pounds.

Shipping dimensions, 16x14x11 inches.

Assembled and Detailed Parts listed on pages 28, 29 and 30.

Type "ZB" Headlight

With Plain Glass and Grid



Front View



Side View

Specifications

Total Depth	Total Height and Width	Projection from Dash	Diameter Reflector
5¼ in.	11½ in.	1½ in.	10¾ in.

Listings of Type "ZB" Headlight, with Plain Glass and Grid

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
With Double Thick Glass	24803	Egualizza	\$5.85
With Plate Glass	24804	Egualimmo	6.20
White Enameled Steel Reflector			
With Double Thick Glass	24853	Eiloof	\$5.85
With Plate Glass	24854	Eilpost	6.20

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$2.70 in the list price, if specifically ordered.

Shipping weight, gross, 32 pounds; net, 22 pounds.

Shipping dimensions, 16x14x11 inches.

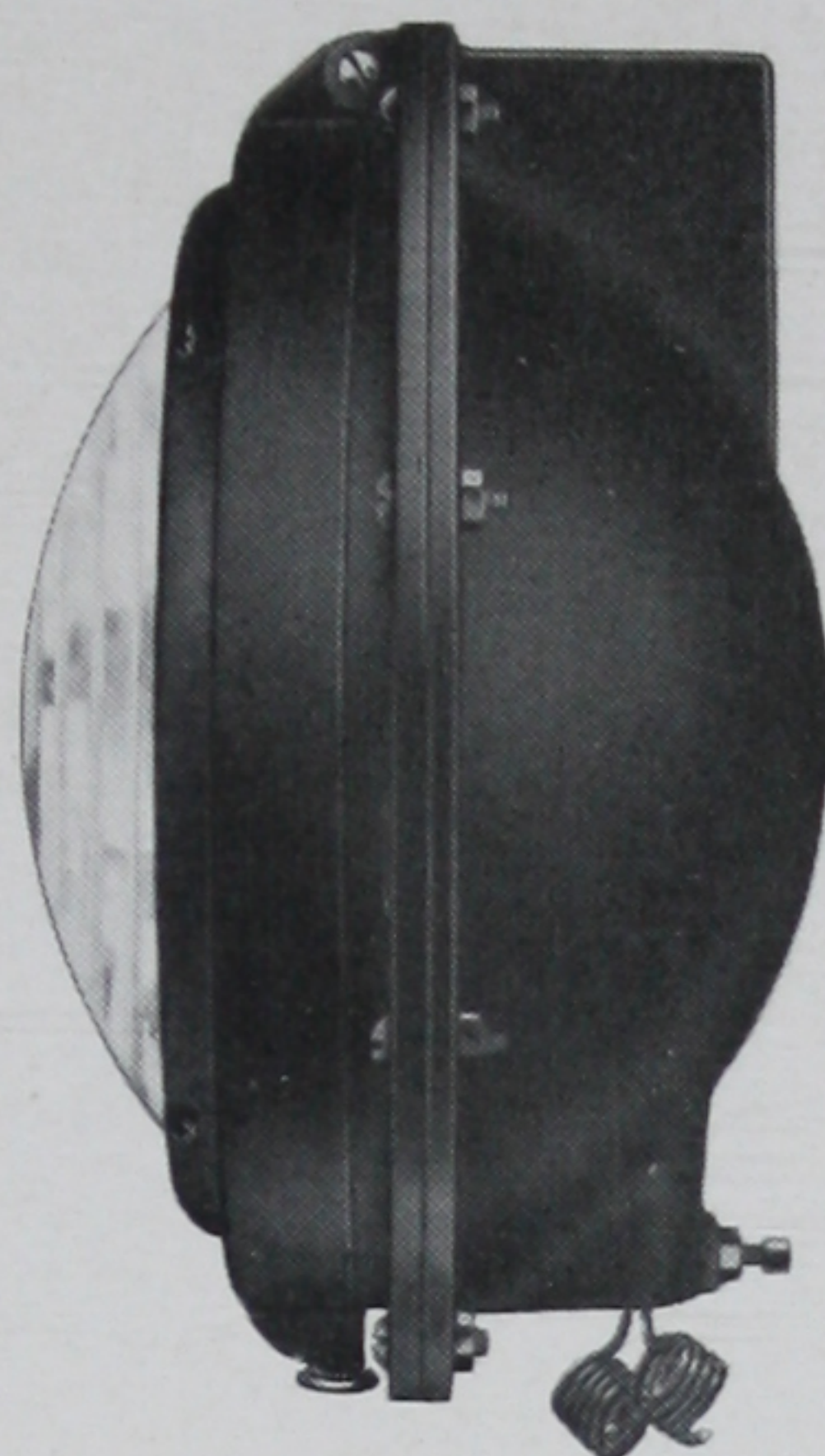
Assembled and Detailed Parts listed on pages 28, 29 and 30.

Type "ZB" Headlight

With Regular Semaphore Lens



Front View



Side View

Specifications

Total
Depth
7 $\frac{1}{8}$ in.

Total Height
and Width
11 $\frac{1}{2}$ in.

Projection
from Dash
3 $\frac{13}{16}$ in.

Diameter
Lens
10 $\frac{3}{8}$ in.

Listings of Type "ZB" Headlight, with Regular Semaphore Lens

Polished Aluminum Reflector

Style of Headlight	Cat. No.	Code Word	List Price
With Plain Regular Semaphore Lens	24805	Egualirai	\$7.20
With Blue Regular Semaphore Lens	24806	Egualisco	7.60
With Green Regular Semaphore Lens	24807	Egualissi	7.60
With Ruby Regular Semaphore Lens	24808	Egualito	8.80

White Enameled Steel Reflector

With Plain Regular Semaphore Lens	24855	Eilritt	\$7.20
With Blue Regular Semaphore Lens	24856	Eilwagen	7.60
With Green Regular Semaphore Lens	24857	Eilzug	7.60
With Ruby Regular Semaphore Lens	24858	Eimer	8.80

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$3.40 in the list price, if specifically ordered.

Shipping weight, gross, 33 pounds; net, 23 pounds.

Shipping dimensions, 16x14x11 inches.

Assembled and Detailed Parts listed on pages 28, 29 and 30.

Type "ZB" Headlight

With Inverted Semaphore Lens



Front View



Side View

Specifications

Total
Depth
5 $\frac{7}{16}$ in.

Total Height
and Width
11 $\frac{1}{2}$ in.

Projection
from Dash
2 $\frac{1}{8}$ in.

Diameter
Lens
8 $\frac{3}{8}$ in.

Listings of Type "ZB" Headlight, with Inverted Semaphore Lens

Polished Aluminum Reflector

Style of Headlight	Cat. No.	Code Word	List Price
With Plain Inverted Semaphore Lens	24809	Egueille	\$7.20
With Blue Inverted Semaphore Lens	24810	Eguerunt	7.60
With Green Inverted Semaphore Lens	24811	Eguilles	7.60
With Ruby Inverted Semaphore Lens	24812	Eguisti	8.80

White Enameled Steel Reflector

With Plain Inverted Semaphore Lens	24859	Einachsig	\$7.20
With Blue Inverted Semaphore Lens	24860	Einackern	7.60
With Green Inverted Semaphore Lens	24861	Einaetzen	7.60
With Ruby Inverted Semaphore Lens	24862	Einaeugig	8.80

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Any headlight listed above will be furnished with a polished brass door frame, at an advance of \$3.40 in the list price, if specifically ordered.

Shipping weight, gross, 33 pounds; net, 23 pounds.

Shipping dimensions, 16x14x11 inches.

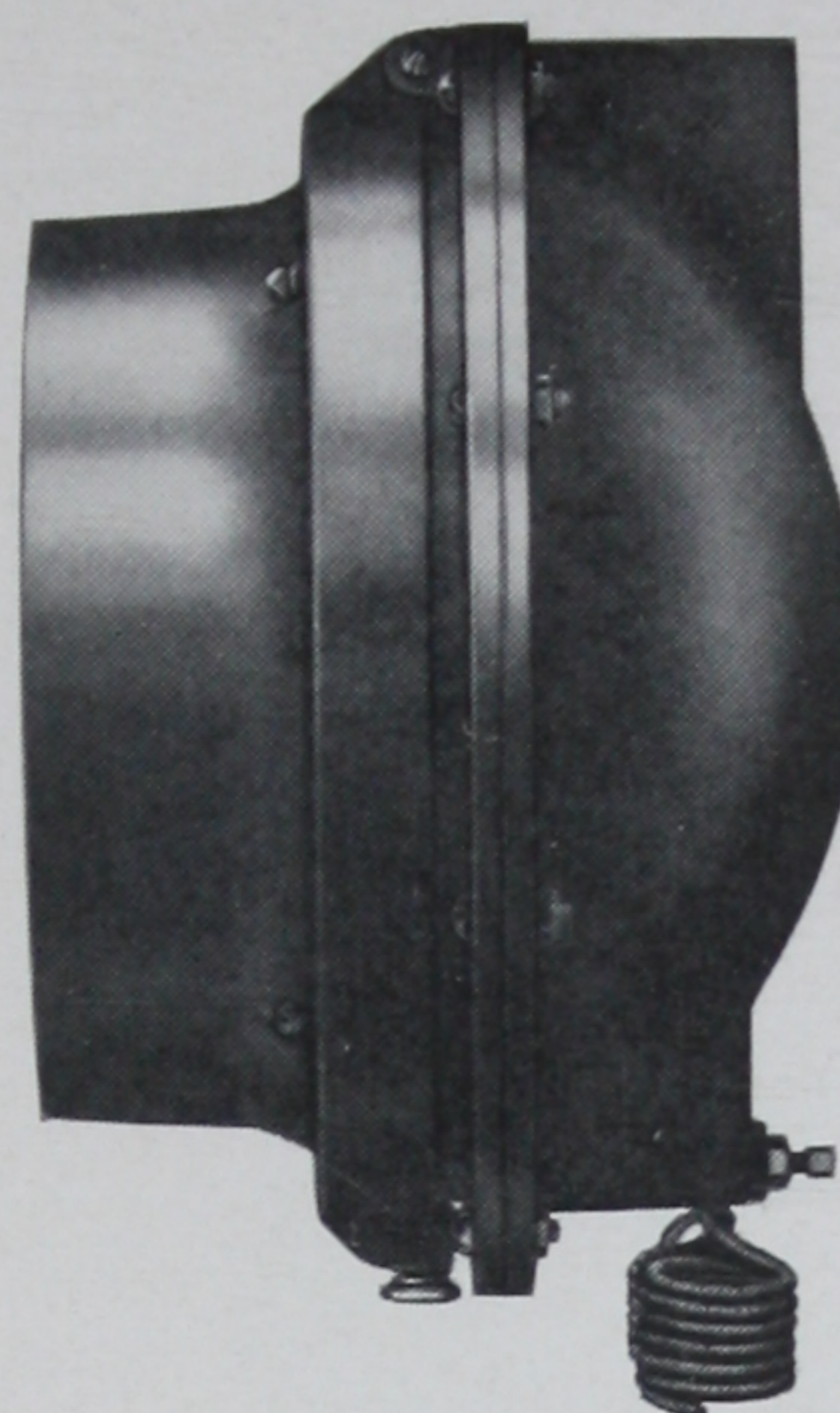
Assembled and Detailed Parts listed on pages 28, 29 and 30.

Type "ZB" Headlight

With Regular Semaphore Lens and Guard



Front View



Side View

Specifications

Total Depth	Total Height and Width	Projection from Dash	Diameter Lens
7 ³ / ₈ in.	11 ¹ / ₂ in.	4 ¹ / ₁₆ in.	8 ³ / ₈ in.

Listings of Type "ZB" Headlight, with Regular Semaphore Lens and Guard

Polished Aluminum Reflector			
Style of Headlight	Cat. No.	Code Word	List Price
Plain Regular Semaphore Lens and Guard	24813	Egularum	\$7.60
Blue Regular Semaphore Lens and Guard	24814	Egurgito	8.00
Green Regular Semaphore Lens and Guard	24815	Egypciaco	8.00
Ruby Regular Semaphore Lens and Guard	24816	Egypius	9.20
White Enameled Steel Reflector			
Plain Regular Semaphore Lens and Guard	24863	Einander	\$7.60
Blue Regular Semaphore Lens and Guard	24864	Einarmig	8.00
Green Regular Semaphore Lens and Guard	24865	Einballen	8.00
Ruby Regular Semaphore Lens and Guard	24866	Einbein	9.20

Prices do not include incandescent lamp.

Any headlight listed above will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.

Shipping weight, gross, 35 pounds; net, 25 pounds.

Shipping dimensions, 16x14x11 inches.

Assembled and Detailed Parts listed on pages 28, 29 and 30.

Type "ZB" Headlight



Side View



Back View

The above views of a type "ZB" headlight installation show that a perfectly rigid mounting of this headlight can be made on a wooden dash without the use of a reinforcing ring. The clamping ring, on the front of the dash, and the flange of the headlight case, on the back, are drawn tight against the ends of the cut boards by the bolts and nuts that hold the headlight in position.

Syracuse Changeable Incandescent Headlight

THE Syracuse Changeable Incandescent headlight is in two distinct parts—a headlight with stem and a receptacle that bolts to the car dash. Thus a single headlight and two receptacles make up a complete equipment for a double end car, as the headlight can be changed from one receptacle to another at pleasure.

The headlight proper is a parabolic reflector, spun from sheet aluminum, highly polished. This reflector is enclosed in a heavy drawn steel jacket, finished in weatherproof enamel, and having the same form as the reflector, with sufficient space between to avoid the possibility of dents being transmitted from the jacket to the reflector. All parts of the headlight are attached to this jacket.

The door rim is of heavy brass, nickered and polished, fitted with double-thick glass. It is secured to the jacket by a strong hinge and spring catch, the catch being protected by a hood.

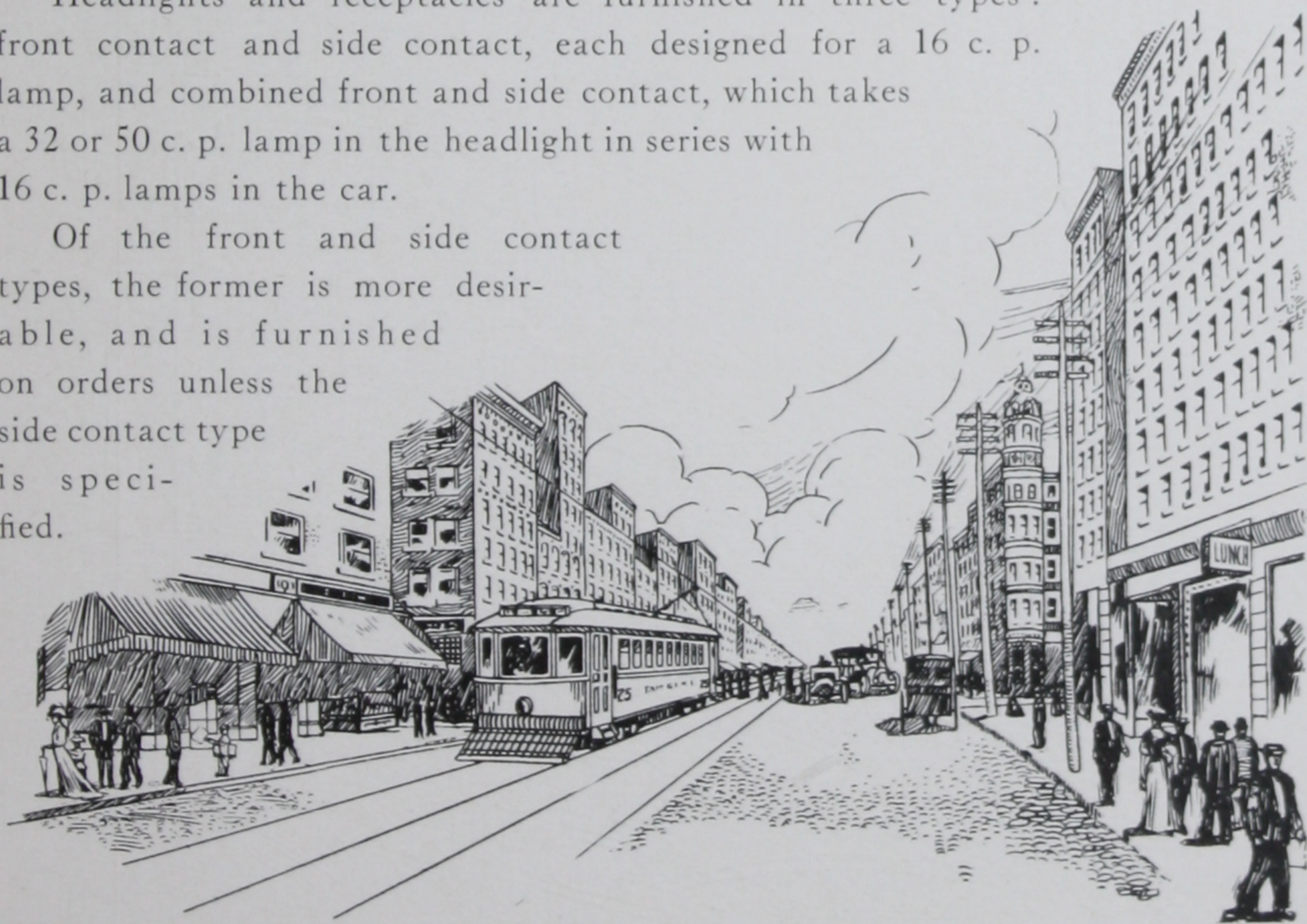
The contact stem is of selected hard wood, made moisture proof by a special treatment. To this contact stem are secured the lamp receptacle and the contact plates. When placed in position in the receptacle, the contact stem serves the double purpose of securing the headlight to the dash and establishing electrical connection.

The receptacle is a weatherproof iron case with hard-wood back, inclosing contact parts, and is attached to the dash by studs secured by lock-nuts on front and back of dash, being removable without disturbing studs.

Contact parts are mounted on a slate base secured to the wood back, allowing damaged parts to be taken out and replaced without disconnecting the receptacle from the dash.

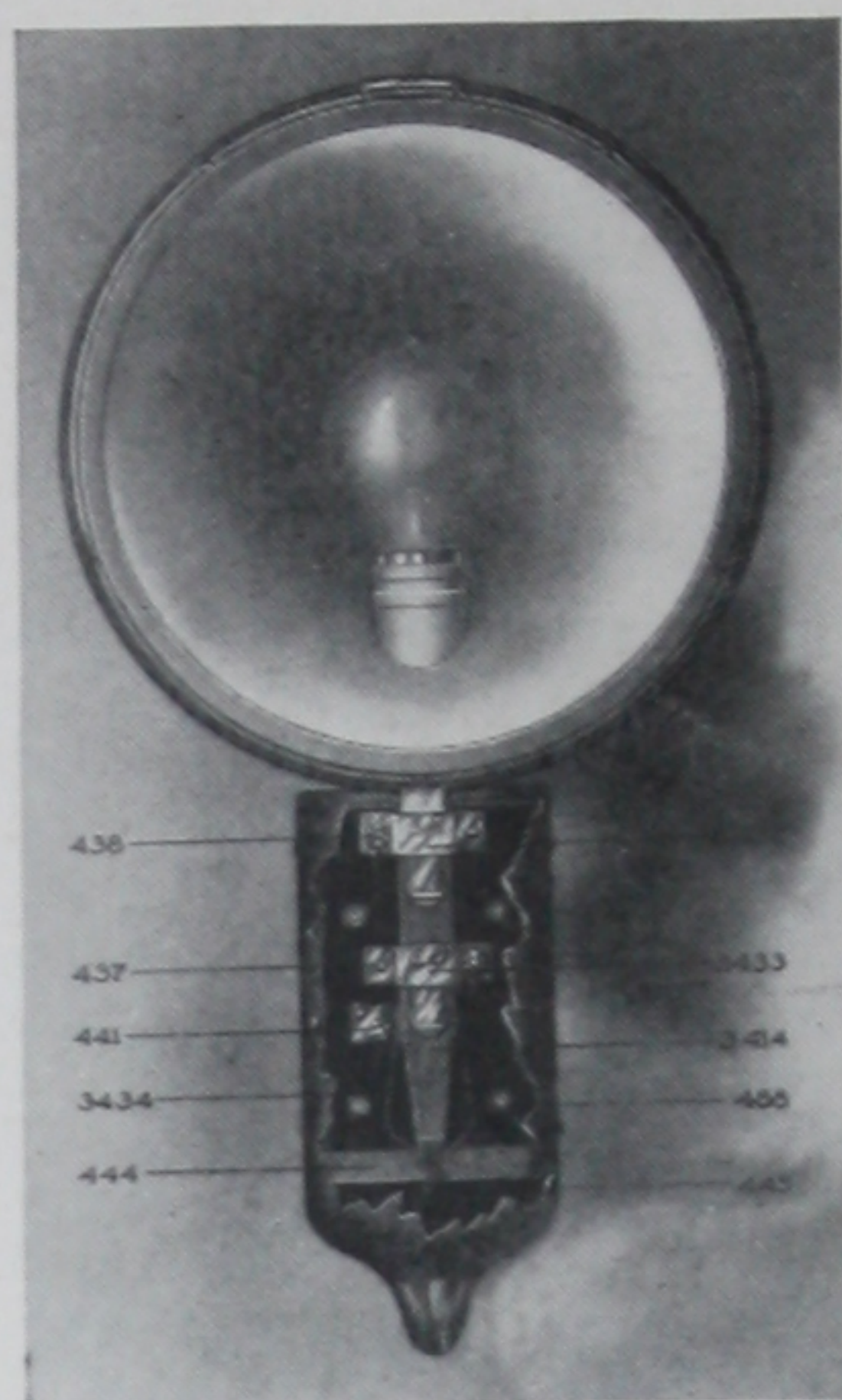
Headlights and receptacles are furnished in three types: front contact and side contact, each designed for a 16 c. p. lamp, and combined front and side contact, which takes a 32 or 50 c. p. lamp in the headlight in series with 16 c. p. lamps in the car.

Of the front and side contact types, the former is more desirable, and is furnished on orders unless the side contact type is specified.

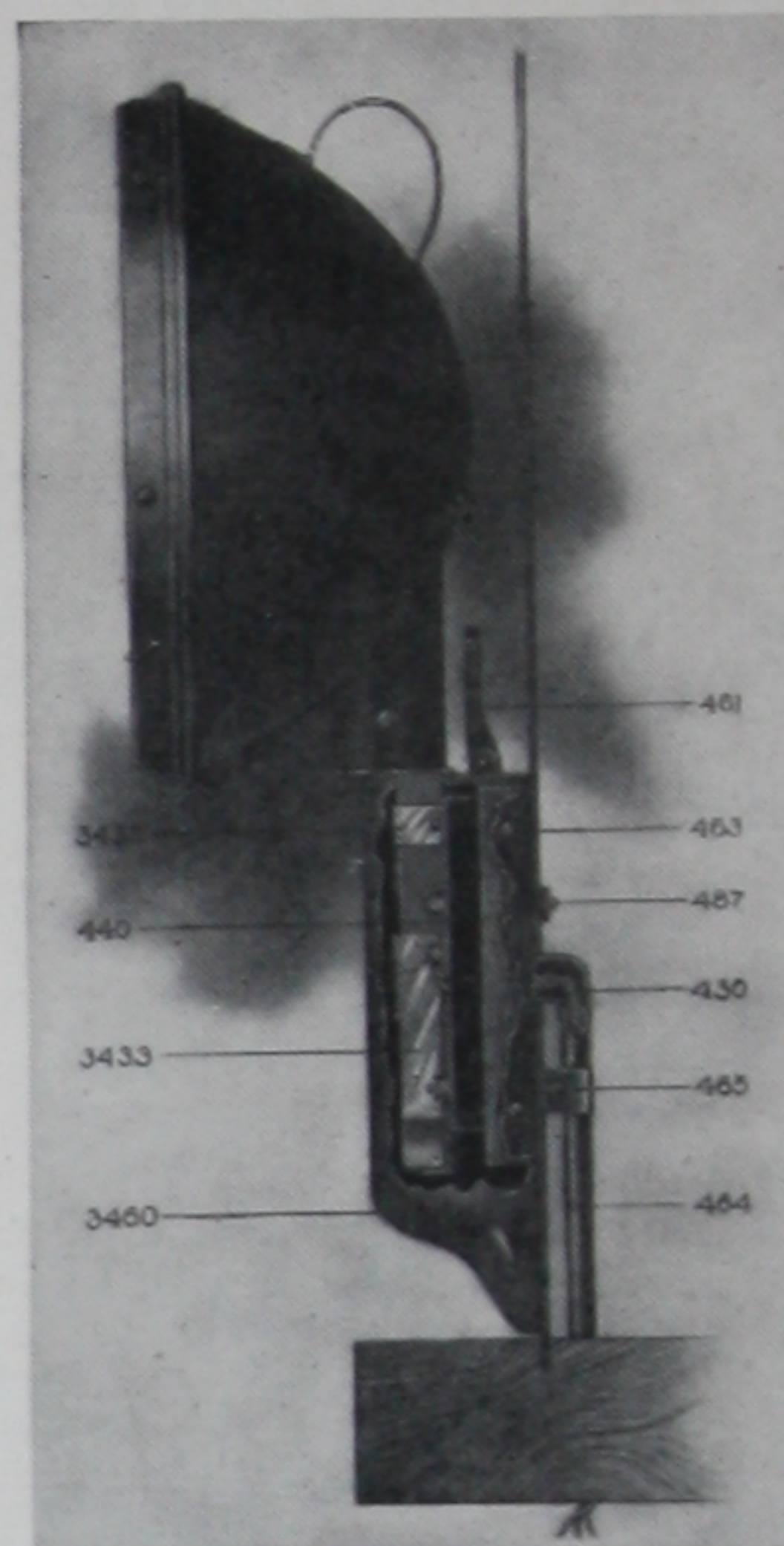


Syracuse Changeable Incandescent Headlight

With Front Contact
For 16 c. p. Incandescent Lamp



Front View



Side View

Specifications

Total Height 22½ in.	Height Headlight 12¾ in.	Height Receptacle 9¾ in.	Depth Headlight 6½ in.
Depth Receptacle 3¼ in.	Projection Headlight from Dash 7 in.	Diameter Reflector 11½ in.	

Listings of Syracuse Changeable Incandescent Headlight, with Front Contact

Equipment	Cat. No.	Code Word	List Price
Complete Equipment, for One Car, Double End (One Headlight and Two Receptacles)	17871	Edris	\$11.20
Complete Equipment, for One Car, Single End (One Headlight and One Receptacle)	17872	Educacao	8.95
Headlight only	17873	Educadores	6.70
Receptacle Complete	17874	Educados	2.25

Prices do not include incandescent lamp.

Shipping weight of one headlight and two receptacles : gross, 35 pounds ;
net, 20 pounds.

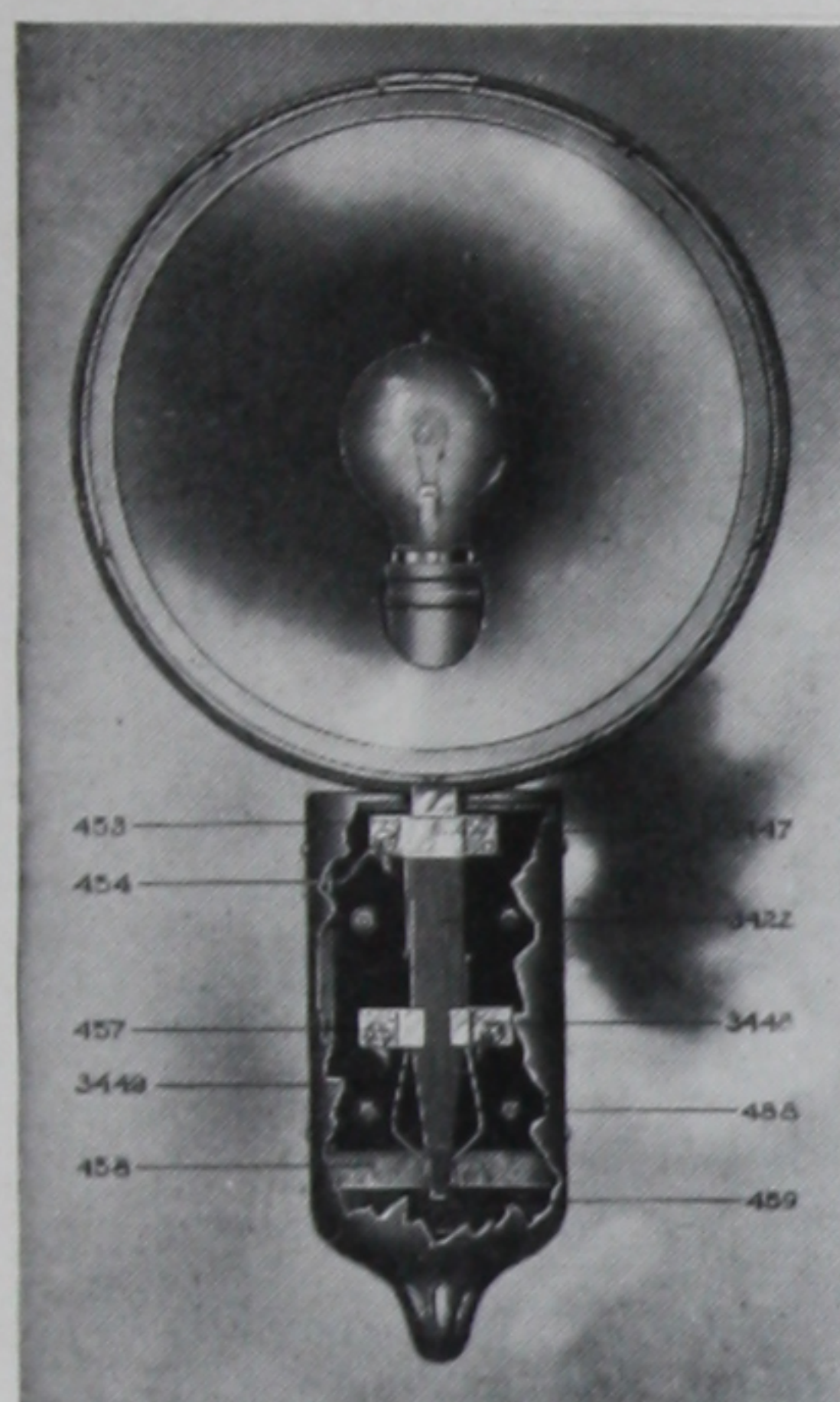
Shipping dimensions of one headlight and two receptacles, 11x16x27 inches.

Assembled and Detailed Parts listed on pages 30 and 31.

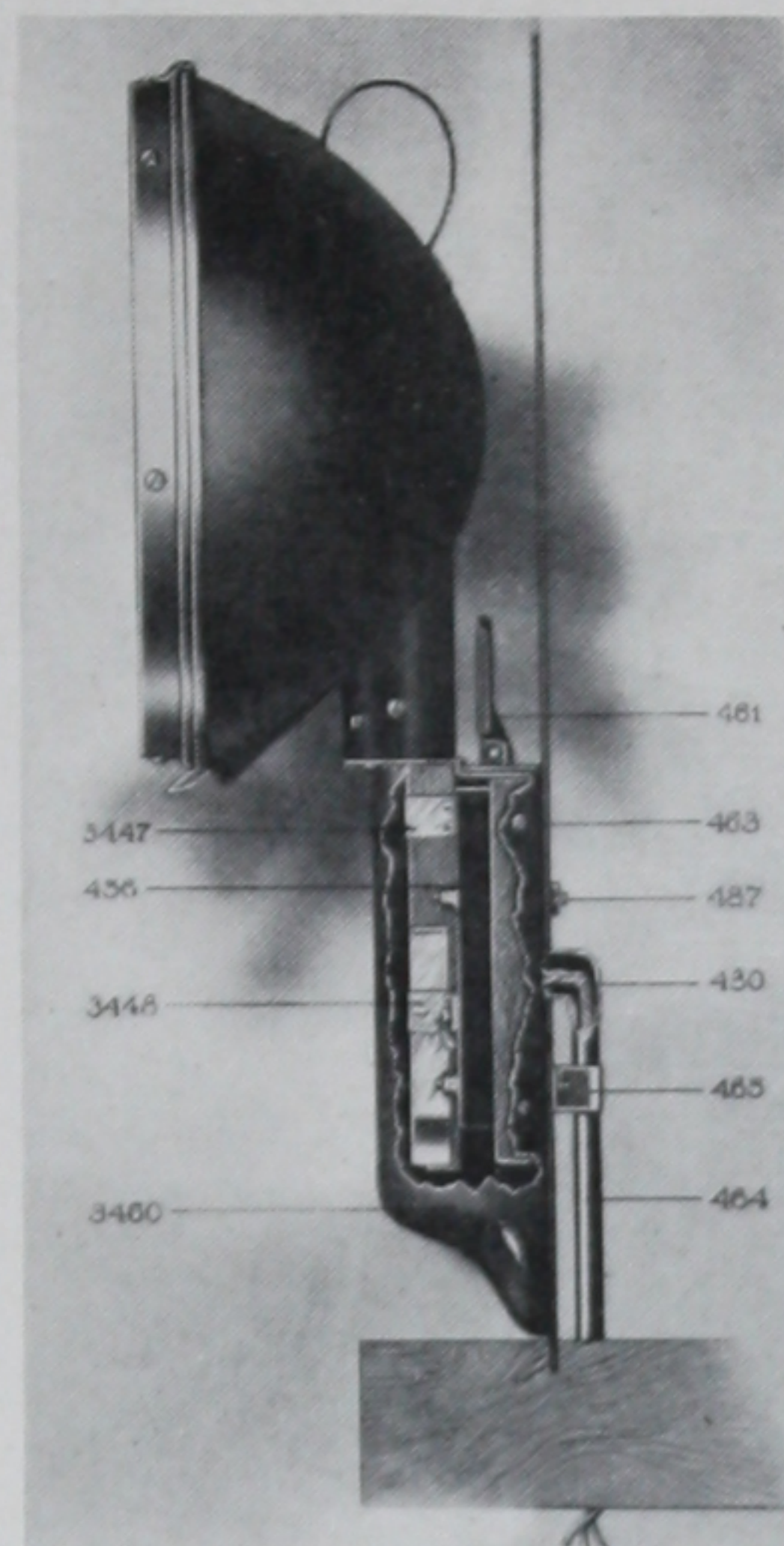
Syracuse Changeable Incandescent Headlight

With Side Contact

For 16 c. p. Incandescent Lamp



Front View



Side View

Specifications

Total Height	Height Headlight	Height Receptacle	Depth Headlight
22½ in.	12¾ in.	9¾ in.	6½ in.
Depth Receptacle	Projection Headlight from Dash	Diameter Reflector	
3¼ in.	7 in.	11½ in.	

Listings of Syracuse Changeable Incandescent Headlight, with Side Contact

Equipment	Cat. No.	Code Word	List Price
Complete Equipment, for One Car, Double End (One Headlight and Two Receptacles)	17876	Educavano	\$11.20
Complete Equipment, for One Car, Single End (One Headlight and One Receptacle)	17877	Educavisti	8.95
Headlight only	17878	Educavit	6.70
Receptacle Complete	17879	Educeret	2.25

Prices do not include incandescent lamp.

Shipping weight of one headlight and two receptacles: gross, 35 pounds; net, 20 pounds.

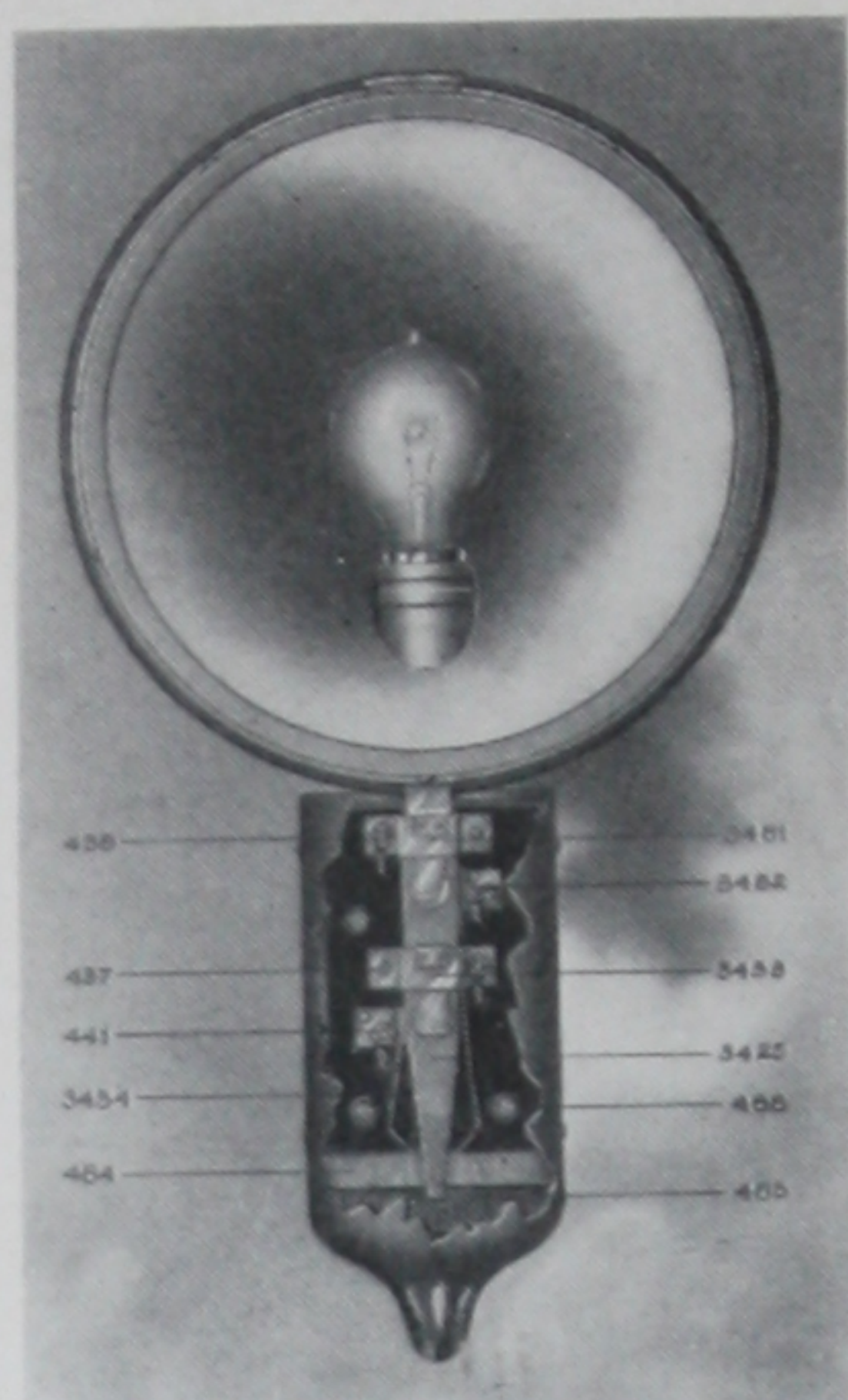
Shipping dimensions of one headlight and two receptacles, 11x16x27 inches.

Assembled and Detailed Parts listed on pages 30 and 31.

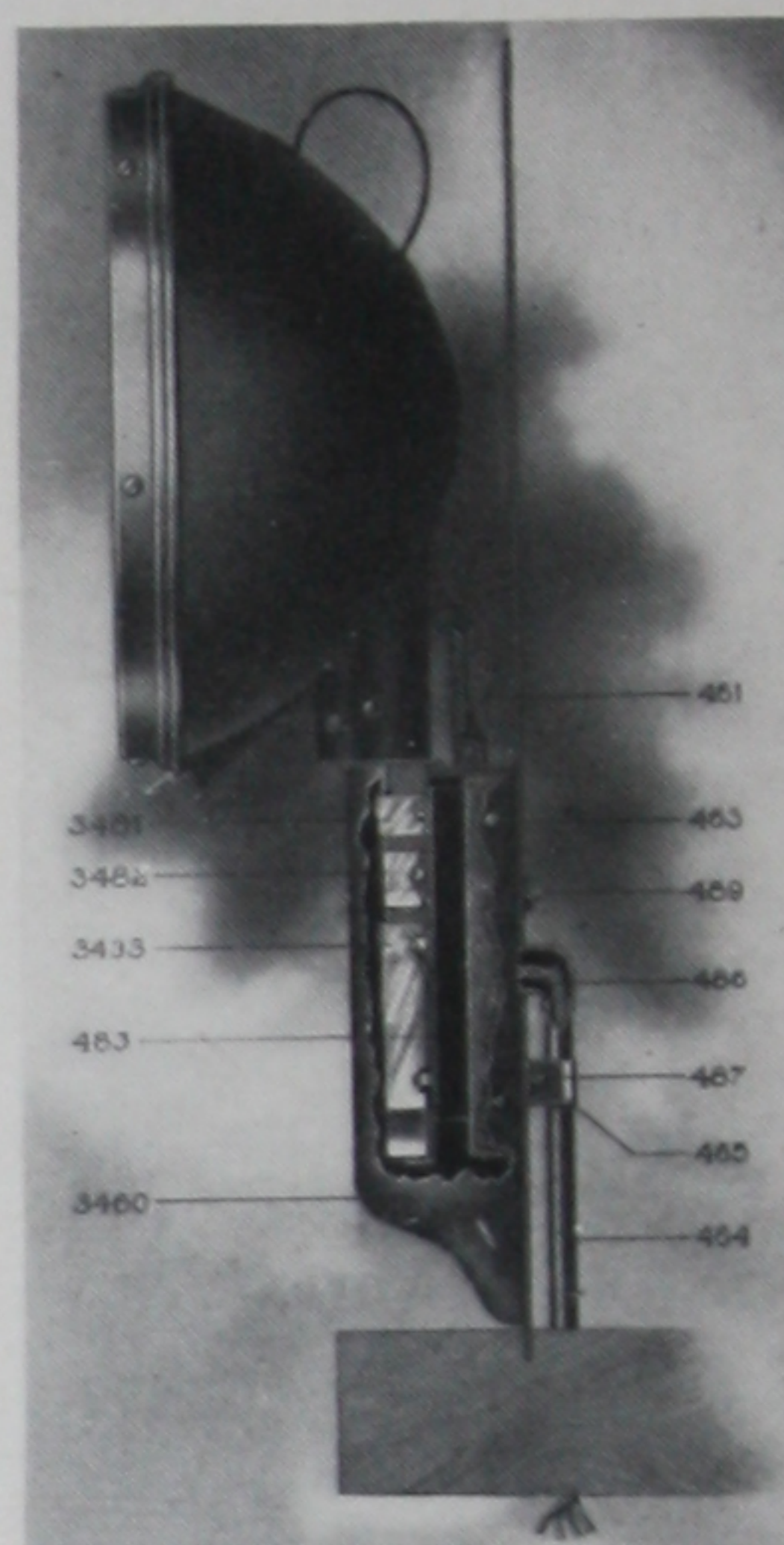
Syracuse Changeable Incandescent Headlight

With Combined Front and Side Contact

For 32 or 50 c. p. Incandescent Lamp



Front View



Side View

Specifications

Total Height	Height Headlight	Height Receptacle	Depth Headlight
22½ in.	12¾ in.	9¾ in.	6½ in.
Depth Receptacle	Projection Headlight from Dash	Diameter Reflector	
3¼ in.	7 in.	11½ in.	

Listings of Syracuse Changeable Incandescent Headlight, with Combined Front and Side Contact

Equipment	Cat. No.	Code Word	List Price
Complete Equipment, for One Car, Double End (One Headlight and Two Receptacles)	17881	Edumia	\$13.30
Complete Equipment, for One Car, Single End (One Headlight and One Receptacle)	17882	Eduquant	10.30
Headlight only	17883	Eduquemos	7.30
Receptacle Complete	17884	Eduques	3.00

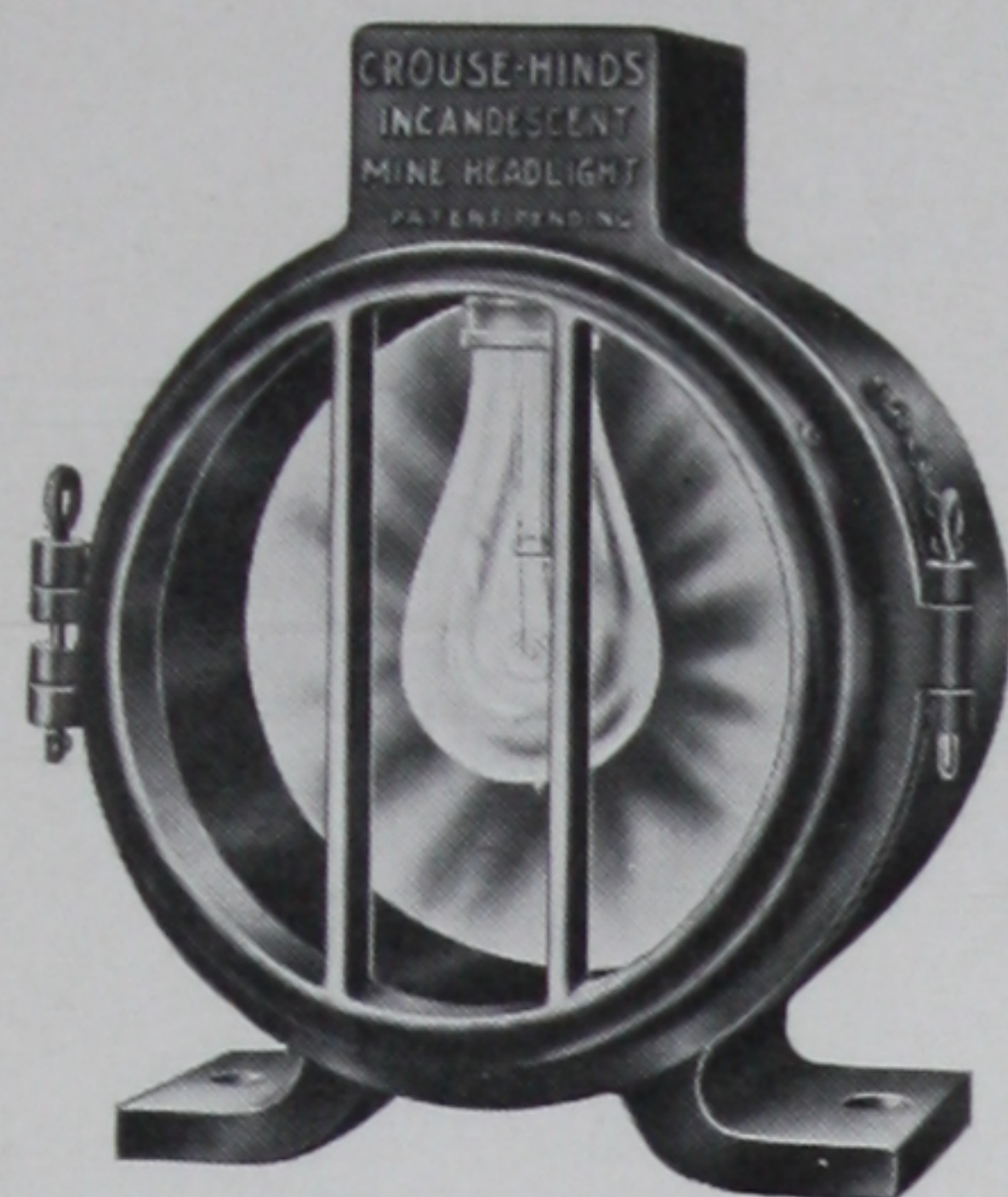
Prices do not include incandescent lamp.

Shipping weight of one headlight and two receptacles, gross, 35 pounds; net, 20 pounds.

Shipping dimensions of one headlight and two receptacles, 11x16x27 inches.

Assembled and Detailed Parts listed on pages 30 and 31.

Type "I" Headlight



Type "I" Headlight

Type "I" headlight is designed for rigid mounting on a mine locomotive, and to withstand the roughest usage. Case and door are heavy cast iron, the latter having two ribs, cast with the frame, to protect the glass. Both case and door are finished with special weatherproof black enamel, and are secured together by heavy side hinge and pin fastening.

On the bottom of the case, and cast with it, are two feet. These feet are drilled for bolts, by means of which the headlight is fastened to the locomotive.

The reflector is parabolic, spun from sheet aluminum and reinforced by a cast iron back. The lamp socket is adjustable, permitting lamps of different sizes to be adjusted to the focal point of the reflector. Two headlights are required for each locomotive. When installed, the two headlights are connected in series, and can be operated on any line voltage between 220 and 500 volts, if lamps which normally require one-half the line voltage are used.

Specifications

Total Depth	Total Height	Total Width	Diameter Reflector
6 in.	9½ in.	9¼ in.	7⅛ in.

Listings of Type "I" Headlight and Assembled Parts

Style Headlight	Cat. No.	Code Word	List Price
1 Complete Headlight (without Incandescent Lamp)	24109	Efflagito	\$6.00

Assembled Parts

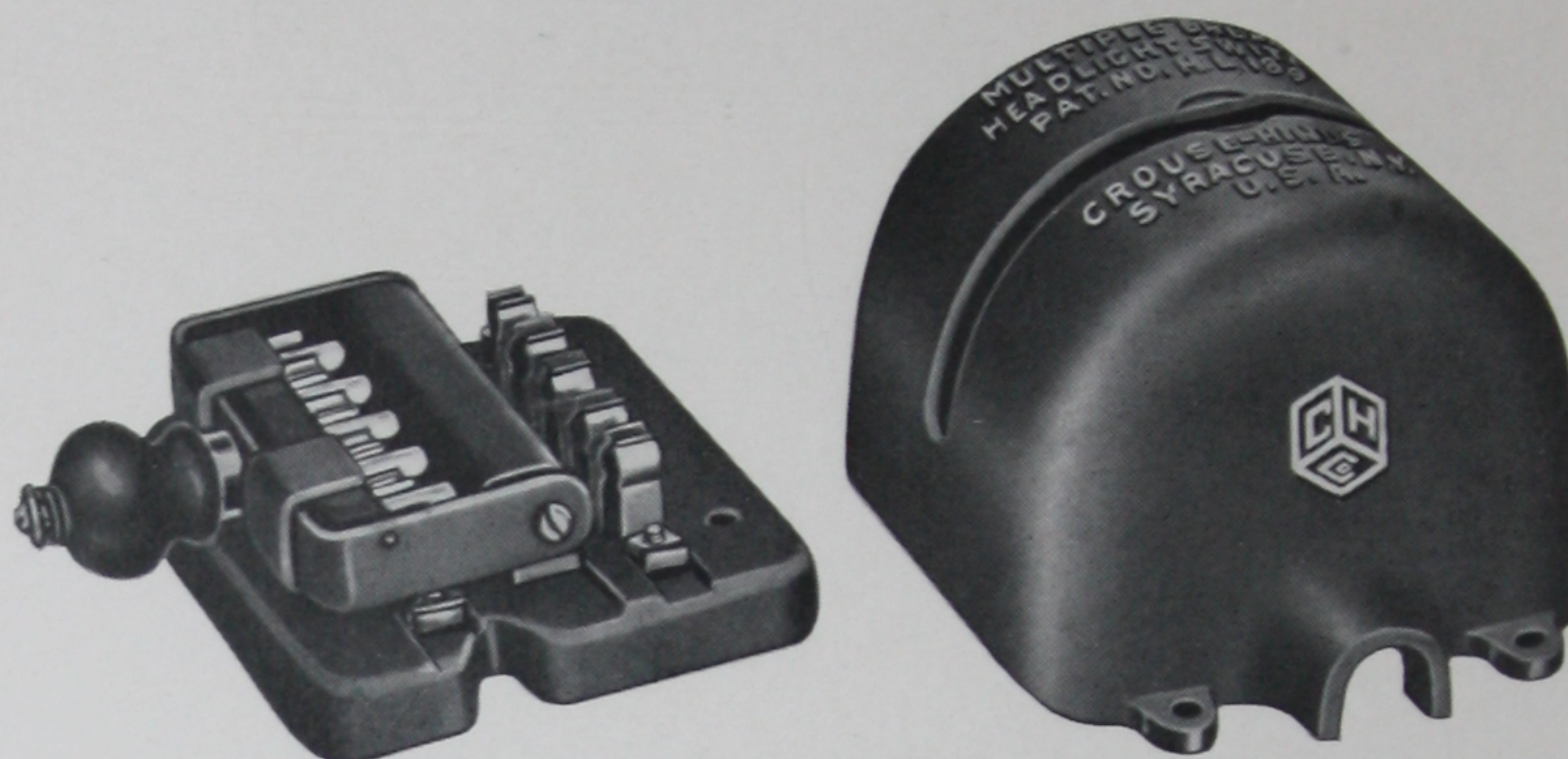
Insulating Bushing and Clamp, for Wire Hole	HL2553	Effammans	\$.35
Lamp Receptacle, on Bracket and Wired	HL3605	Effanque	.90
7⅛-Inch Reflector Equipment	HL3607	Efflation	2.25
Complete Case, without Mechanism or Door	HL3608	Effatos	2.50
Complete Case, with Mechanism, but without Door	HL3609	Effeurais	3.50
Complete Door, only	HL3610	Effeure	2.00
Glass Holder Bracket, each	HL3680	Efflevisti	.07

A type "I" headlight will be furnished with a copper reflector, silver plated and polished, at an advance of \$1.50 in the list price, if specifically ordered.
Shipping weight of one headlight, gross, 28 pounds; net, 16 pounds.
Shipping dimensions of one headlight, 14x12x10 inches.

Detailed Parts listed on page 31.

Multiple Break Headlight Switches

One-Way, Two-Way and Reversing



Two-way Switch with Cover Removed

The Multiple Break headlight switch is a distinct improvement over the snap switch for use with headlights or on any circuit not over 600 volts and 10 ampere capacity. One of its chief advantages is that it has ten air gaps, or breaks, thus reducing to a minimum the length of the arc and materially adding to the life of the switch.

Complete insulation for the handle and case from the current carrying parts is secured by having the five blades moulded into a composition cross-bar. Another feature is the spring handle knob which holds the switch open by engaging a recess in the case. This arrangement makes it impossible for the switch to be closed by accident, as it is necessary for the handle knob to be pulled outward before the switch can be closed.

A study of the blades and clips, as shown in the illustrations, will also make it evident that there is no danger of the switch jarring open when once closed.

The position of the handle indicates whether the switch is on or off.

This switch is made in three styles—one-way, two-way and reversing. The one-way is for use with straight arc headlights, heaters, pump motors and lighting circuits. The one-way switch is the same as the two-way switch, except that it is provided with but one row of clips. The two-way style is for use with combination arc and incandescent headlights. The reversing switch makes it possible to reduce the light beam of an Imperial Luminous headlight by reversing the direction of the current through the electrodes. The reversing switch is the same as the two-way switch, except that it is provided with special back connections. The two-way switch cannot be used as a reversing switch, and vice versa.

Specifications

One-Way, Two-Way or Reversing Switch				
Length	Width	Height	Weight	Capacity
7½ in.	5½ in.	6 in.	6 lbs.	10 Amp.
	Shipping Weight		Dimensions Boxed	
	8 lbs.		7x8x9 in.	

Listings of Multiple Break Headlight Switches

Description	Cat. No.	Code Word	List Price
Multiple Break Headlight Switch, One-Way . .	HL110S	Eindklank	\$1.50
Multiple Break Headlight Switch, Two-Way . .	HL140S	Eindletter	1.70
Multiple Break Headlight Switch, Reversing . .	HL150S	Eindorren	1.70

Incandescent Headlight Parts

Type "W" — Assembled Parts

Description	Cat. No.	Code Word	List Price
Case with Aluminum Reflector and other Fixtures, less Door (includes HL670, 676, 677, 678, 827, 3672)	HL3670	Edisma	\$4.80
Case with White Enameled Steel Reflector and other Fixtures, less Door (includes HL670, 676, 678, 800, 827, 3672)	HL4001	Eingekauft	4.00
Lamp Receptacle, on Bracket and Wired (includes HL671, 672, 673, 674, 675)	HL3672	Edisseris	.70
Plain Rim Door with Fixtures, less Glass (includes HL683, 684, 685, 686, 3680)	HL3686	Editioned	1.65
Plain Rim Door, with Double Thick Glass (includes HL687, 3686)	HL3687	Editioning	1.80
Grid Frame Door with Fixtures, less Glass (includes HL683, 684, 685, 689, 3680)	HL3689	Editores	2.05
Grid Frame Door, with Double Thick Glass (includes HL687, 3689)	HL3690	Editorial	2.20
Semaphore Door with Fixtures, less Lens (includes HL683, 684, 685, 690, 691, 692)	HL3692	Editorship	2.10
Semaphore Guard Door with Fixtures, less Lens (includes HL683, 684, 685, 690, 691, 802)	HL4002	Eingekehrt	2.50

Type "W" — Detailed Parts

Case (casting only), for Cases (HL3670, 830)	HL670	Ediximus	\$3.00
Bracket, for Lamp Receptacle (HL674), Edison Base	HL672	Edizione	.35
Hinge Bolt, for Cases (HL3670, 4001)	HL678	Edocui	.07
Frame, for Plain Rim Door (HL3686)	HL686	Edolavisti	.90
Frame, for Grid Door (HL3689)	HL689	Edoner	1.25
Frame, for Semaphore Door (HL3692)	HL692	Edonorum	1.10
Frame, for Semaphore Guard Door (HL4002)	HL802	Ejulandi	1.50

Type "Z" — Assembled Parts

Case with Aluminum Reflector and other Fixtures, less Door (includes HL676, 803, 805, 807, 827, 4009)	HL4007	Eingittern	\$4.00
Case with White Enameled Steel Reflector and other Fixtures, less Door (includes HL676, 803, 806, 807, 827, 4009)	HL4008	Eingreifen	4.00
Plain Rim Door with Fixtures, less Glass (includes HL684, 685, 818, 8109, 3680)	HL4010	Einharken	1.65
Plain Rim Door, with Double Thick Glass (includes HL810, 4010)	HL4011	Einhegen	1.80
Grid Frame Door with Fixtures, less Glass (includes HL684, 685, 818, 810, 3680)	HL4013	Einhellig	2.05
Grid Frame Door, with Double Thick Glass (includes HL810, 4013)	HL4014	Einimpfen	2.20
Semaphore Door with Fixtures, less Lens (includes HL683, 684, 685, 691, 813, 814)	HL4016	Einjagen	2.10
Semaphore Guard Door with Fixtures, less Lens (includes HL683, 684, 685, 691, 813, 815)	HL4021	Einlaut	2.90

Parts Common to More than One Type of Headlight, listed on pages 29 and 30.

Incandescent Headlight Parts—continued

Type “Z” — Detailed Parts

Case (casting only), for Cases (HL4007, 4008)	HL 803	Ejulandos	\$3.00
9¾-Inch Aluminum Reflector, for Case (HL4007)	HL 805	Ejulas	2.50
9¾-Inch White Enameled Steel Reflector, for Case (HL4008)	HL 806	Ejulation	2.50
Frame, for Plain Rim Door (HL4010)	HL 809	Ejulavi	.90
Double Thick Glass, for Plain and Grid Frame Doors (HL4010, 4013)	HL 810	Ejulavisti	.35
Plate Glass, for Plain and Grid Frame Doors (HL4010, 4013)	HL 811	Ejulitas	1.05
Frame, for Grid Door (HL4013)	HL 812	Ejulito	1.25
Glass Holder Ring, for Semaphore and Semaphore Guard Doors (HL4016, 4021)	HL 813	Ejulo	.35
Frame, for Semaphore Door (HL4016)	HL 814	Ejusmodi	1.10
Frame, for Semaphore Guard Door (4021)	HL 825	Ekbatana	1.50

Type “ZB” — Assembled Parts

Case with Aluminum Reflector and other Fixtures, less Clamping Ring and Door (includes HL676, 677, 807, 816, 827, 4009)	HL4026	Einrahmen	\$3.50
Case with White Enameled Steel Reflector and other Fixtures, less Clamping Ring and Door (includes HL676, 801, 807, 816, 827, 4009)	HL4027	Einraunen	3.50
Plain Rim Door with Fixtures, less Glass (includes HL683, 684, 685, 818, 3680)	HL4028	Einreiten	1.65
Plain Rim Door, with Double Thick Glass (includes HL687, 4028)	HL4029	Einrippig	1.80
Grid Frame Door with Fixtures, less Glass (includes HL683, 684, 685, 819, 3680)	HL4031	Einsam	2.05
Grid Frame Door, with Double Thick Glass (includes HL687, 4031)	HL4032	Einsamig	2.20
Semaphore Door with Fixtures, less Lens (includes HL683, 684, 685, 690, 691, 821)	HL4034	Einsatz	2.10
Semaphore Guard Door with Fixtures, less Lens (includes HL683, 684, 685, 690, 691, 822)	HL4039	Einstmals	2.90

Type “ZB” — Detailed Parts

Case (casting only), for Cases (HL4026, 4027)	HL816	Ekdemos	\$2.30
Clamping Ring	HL817	Ekellos	1.00
Frame, for Plain Rim Door (HL4028)	HL818	Eklektus	.90
Frame, for Grid Door (HL4031)	HL819	Ekloge	1.25
Bolt and Nut, for Glass Holder Ring (HL690, on Type “ZB”) (per dozen)	HL820	Eknomos	.40
Frame, for Semaphore Door (HL4034)	HL821	Ekrebel	1.10
Frame, for Semaphore Guard Door (HL4039)	HL822	Ekron	1.50
Plain Inverted Semaphore Lens, for Door (HL4034)	HL823	Elabitur	2.10
Blue Inverted Semaphore Lens, for Door (HL4034)	HL824	Elabor	2.50
Green Inverted Semaphore Lens, for Door (HL4034)	HL825	Elaborale	2.50
Ruby Inverted Semaphore Lens, for Door (HL4034)	HL826	Elacao	3.90

Parts Common to More than One Type of Headlight, listed on pages 29 and 30.

Incandescent Headlight Parts — continued
Assembled and Detailed Parts Common to Two or All of Types “W,”
“Z” and “ZB” Headlights

Glass Holder Bracket complete (includes HL680, 681, 682). For Type “W,” HL3686, 3689; Type “Z,” HL4010, 4013; Type “ZB,” HL4028, 4031	HL3680	Editicia	\$.07
Lamp Receptacle, on Bracket and Wired (includes HL671, 673, 674, 675, 804). For Types “Z” and “ZB”	HL4009	Einguss	.70
Bracket, for Lamp Receptacle (HL674), Edison Base. For Types “Z” and “ZB”	HL804	Ejulandum	.35
Screw, for Lamp Receptacle Bracket. For all Types (per dozen)	HL671	Edixissem	.20
Bolt, for Lamp Receptacle (HL674), Edison Base. For all Types (per dozen)	HL673	Edmondie	.60
Lamp Receptacle, Edison Base. For all Types	HL674	Edmundo	.35
Lead Wire. For all Types (per foot)	HL675	Edoardo	.03
Center Screw, for Reflector. For all Types (per dozen)	HL676	Edocenter	.25
Rim Screw, for Reflector. For all Types (per dozen)	HL827	Elachie	.25
8 $\frac{3}{4}$ -Inch Aluminum Reflector. For Types “W” and “ZB”	HL677	Edocephale	2.50
8 $\frac{3}{4}$ -Inch White Enameled Steel Reflector. For Types “W” and “ZB”	HL801	Ejulabo	2.50
Support only, for Glass Holder Bracket (HL3680) (per dozen)	HL680	Edocuisti	.36
Bolt and Nut, for Glass Holder Bracket Support (HL680). (per dozen)	HL681	Edolandi	.40
Rubber Packing, for Glass Holder Bracket (HL3680) and Glass Holder Rings (HL813, 690) (per foot)	HL682	Edolandos	.12
Coil Spring, for Door Catch. For all Types	HL684	Edolatorum	.07
Thumb Wheel, for Door Catch. For all Types	HL685	Edolatum	.10
Double Thick Glass. For Type “W,” HL3686, 3689; Type “ZB,” HL4028, 4031	HL687	Edolien	.35
Plate Glass. For Type “W,” HL3686, 3689; Type “ZB,” HL4028, 4031	HL688	Edomitas	1.05
Plain Semaphore Lens, for Type “W,” HL3692, 4002; Type “Z,” HL4016, 4021; Type “ZB,” HL4034, 4039	HL693	Edormisco	2.10
Blue Semaphore Lens, for Type “W,” HL3692, 4002; Type “Z,” HL4016, 4021; Type “ZB,” HL4034, 4039	HL694	Edossage	2.50
Green Semaphore Lens, for Type “W,” HL3692, 4002; Type “Z,” HL4016, 4021; Type “ZB,” HL4034, 4039	HL695	Edostome	2.50
Ruby Semaphore Lens, for Type “W,” HL3692, 4002; Type “Z,” HL4016, 4021; Type “ZB,” HL4034, 4039	HL696	Edredon	3.90
Glass Holder Ring. For Type “W,” HL3692, 4002; Type “ZB,” HL4034, 4039	HL690	Edonio	.35

Continued on next page.

Incandescent Headlight Parts—continued

Assembled and Detailed Parts Common to Two or All of Types “W,” “Z” and “ZB” Headlights—continued

Bolt and Nut, for Glass Holder Rings (HL690, on Type “W,” HL813) (per dozen)	HL691	Edonismo	\$.40
Hinge Bolt. For Type “Z,” HL4007; Type “ZB,” HL4026	HL807	Ejulatos	.07
Shaft, for Door Catch. For Type “W,” HL3686, 3689, 3692, 4002; Type “Z,” HL4016, 4021 .	HL683	Edolandum	.07
Shaft, for Door Catch. For Type “Z,” HL4019, 4013; Type “ZB,” HL4034, 4039	HL808	Ejulatum	.07

Syracuse Changeable, Front Contact—Assembled Parts

Stem with Lamp Receptacle, Edison Base	HL3414	Educaemus	\$1.50
Complete Mechanism, less Receptacle	HL3431	Educate	1.90
Contact Bridge	HL3432	Educateur	.60
Long Finger Spring	HL3433	Educative	.70
Short Finger Spring	HL3434	Educatore	.50
Set of Contact Clips, Mounted on Slate (includes HL437, 438, 439, 440, 441, 3432, 3433, 3434) .	HL3440	Educatrix	1.60
Stationary Receptacle, less Mechanism	HL3460	Educatum	1.00

Syracuse Changeable, Side Contact—Assembled Parts

Stem with Lamp Receptacle, Edison Base	HL3422	Educeretis	\$1.50
Complete Mechanism, less Receptacle	HL3446	Educhiamo	1.90
Contact Bridge	HL3447	Eductor	.65
Long Finger Spring	HL3448	Edulcare	.50
Short Finger Spring	HL3449	Edulcorado	.50
Set of Contact Clips, Mounted on Slate (includes HL453, 454, 455, 456, 457, 3447, 3448, 3449) .	HL3456	Edulica	1.60
Stationary Receptacle, less Mechanism	HL3460	Educatum	1.00

Syracuse Changeable, Combined Front and Side Contact— Assembled Parts

Stem with Lamp Receptacle, Edison Base	HL3425	Edurescis	\$2.00
Long Finger Spring	HL3433	Educative	.70
Short Finger Spring	HL3434	Educatore	.50
Stationary Receptacle, less Mechanism	HL3460	Educatum	1.00
Complete Mechanism, less Receptacle	HL3480	Edzard	2.50
Contact Bridge	HL3481	Eedbrekers	.60
Auxiliary Contact	HL3482	Eedbreuk	.50
Set of Contact Clips, Mounted on Slate (includes HL437, 438, 439, 440, 441, 483, 3433, 3434, 3481, 3482)	HL3483	Eedgespan	2.00

Syracuse Changeable—General Parts

Removable Headlight, less Stem. For all Three Types	HL3400	Eekhandel	\$6.00
Removable Headlight, less Stem and Glass. For all Three Types	HL3401	Eekhoren	5.80
Removable Headlight, less Stem and Door. For all Three Types	HL3403	Eelbuck	4.50

Incandescent Headlight Parts—continued
Syracuse Changeable—General Parts—continued

Complete Door. For all Three Types	HL3409	Eeltachtig	\$ 3.20
Complete Door, less Glass. For all Three Types	HL3410	Eelterig	3.00
Glass Holder Bracket, for HL3409	HL3411	Eeltzweer	.15
Stem with Lamp Receptacle, Edison Base. For Front Contact Type	HL3414	Eenbladig	1.50
Stem with Lamp Receptacle, Edison Base. For Side Contact Type	HL3422	Eenbloemig	1.50
Handle, for HL3400	HL 404	Eendebout	.15
Catch, for HL3400	HL 405	Eendenei	.30
Hood, for HL405	HL 406	Eendenhok	.15
Hinge, for HL3409	HL 408	Eendenkom	.35
Glass, for HL3409	HL 409	Eendenkooi	.35
Porcelain Lamp Receptacle, Edison Base. For all Three Types	HL 414	Eender	.35
Fastening Screw, for HL414 (per dozen)	HL 415	Eendeveder	.24
Lead Wires, for HL3431, 3446 (per foot)	HL 430	Eendjes	.03
1/2-Inch Fastening Screw, for HL3431, 3480 (per dozen)	HL 437	Eendracht	.24
5/8-Inch Fastening Screw, for HL3431, 3480 (per dozen)	HL 438	Eendvogels	.24
Slate Base, for HL3431	HL 440	Eengrepig	.35
Wire Nuts, for HL3431, 3480	HL 441	Eenhandig	.10
Stem with Lamp Receptacle, Edison Base. For Combined Front and Side Contact Type	HL3425	Eenhoekig	2.00
Wooden Base, for HL3431	HL 444	Eenhooring	.15
Weatherproof Backing, for HL3431	HL 445	Eenhuizig	.10
5/8-Inch Fastening Screw, for HL3446 (per dozen)	HL 453	Eenigerlei	.24
3/4-Inch Fastening Screw, for HL3446 (per dozen)	HL 454	Eeniglijk	.30
Slate Base, for HL3446	HL 456	Eenkennig	.35
Wire Nut, for HL3446	HL 457	Eenkleurig	.10
Wooden Base, for HL3446	HL 458	Eenlobbig	.15
Weatherproof Backing, for HL3446	HL 459	Eenoog	.10
Lid for Receptacle, for HL3460	HL 461	Eenoogig	.35
Fastening Screw, for HL3460 (per dozen)	HL 463	Eenrijm	.25
Conduit, for Lead Wires (HL430, 486)	HL 464	Eensgezind	.35
Clamp, for Conduit (HL464)	HL 465	Eensklaps	.15
Slate Base, for HL3480	HL 483	Eensnarig	.35
Wooden Base, for HL3480	HL 484	Eenspan	.15
Weatherproof Backing, for HL3480	HL 485	Eenstemmig	.10
Lead Wires, for HL3480 (per foot)	HL 486	Eenstijlig	.03
Fastening Stud and Nuts, for all Mechanisms	HL 487	Eenvakkig	.15
Extra Nuts, for HL487 (per dozen)	HL 488	Eenvervig	.25
Short Stove Bolt, for HL3480 (per dozen)	HL 489	Eenvinnig	.30
Bracket for holding Removable Headlight when not in use	HL 490	Eenvoetig	.35

Type "I" Headlight—Detailed Parts

Screw, for HL569 (per dozen)	HL 7	Efflictim	\$.20
Catch Pin with Chain	HL569	Effloreo	.35
Screw, for HL3607 (per dozen)	HL578	Efflorui	.35
Hinge Bolt, for HL3610	HL587	Efflower	.07
Bracket, for HL674 (see HL3605)	HL605	Effluencia	.35
Frame of Case (see HL3608)	HL608	Effluvial	2.00
Glass, for Door	HL609	Effludio	.35
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